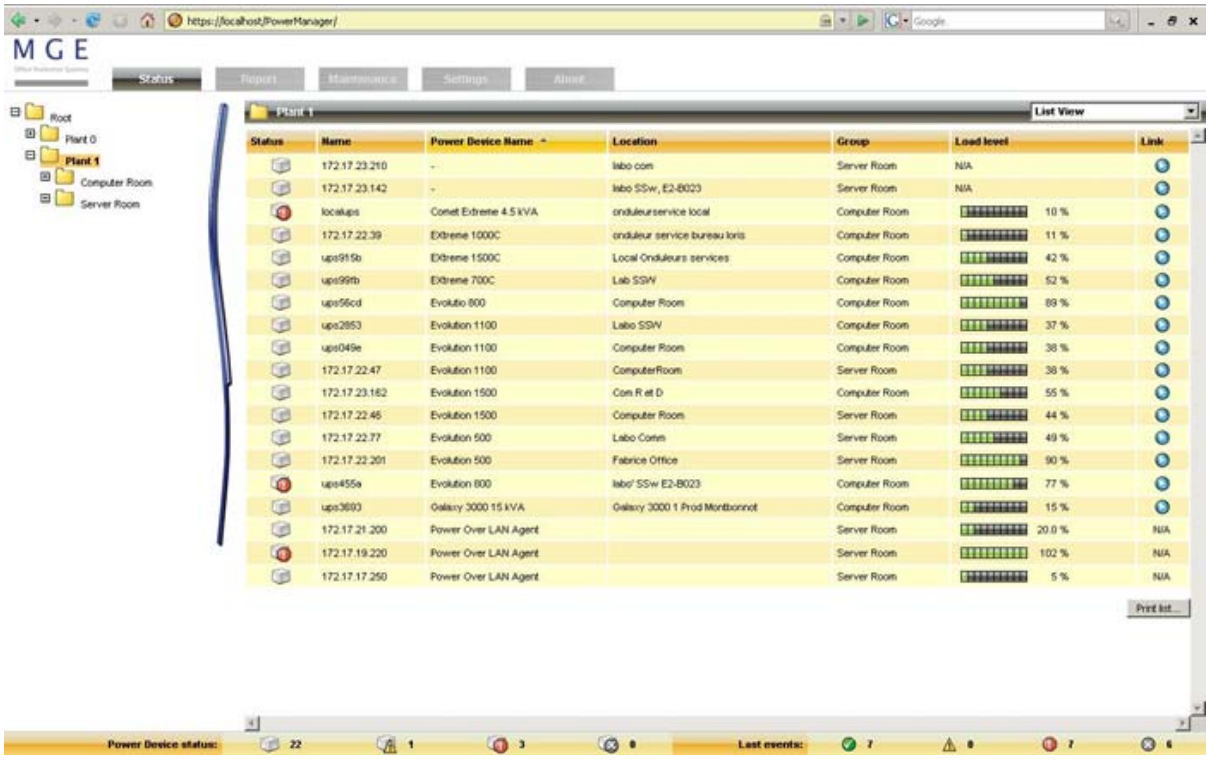
Enterprise Power Manager

User's Guide



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1 Introduction

MGE supervision tool is called "Enterprise Power Manager".
"Enterprise Power Manager" discovers all MGE UPSs connected to the network (either by means of a card or a proxy). For the detailed list of compatible solutions, please refer to the paragraph 4.3 (Equipment Compatibility List) hereafter.
This document describes the steps to install and use “Enterprise Power Manager”.

NEW functions of Enterprise Power Manager V2:

- *A simple and very powerful representation mode lets you create your electrical supervision diagram using a web browser.*
- *Enterprise Power manager V2 also allows the supervision of servers hosting the Network Shutdown Module V3 application.*

Supervision using Enterprise Power Manager

- **Easy supervision of a group of UPS systems**

  Enterprise Power Manager is a system for managing networked UPSs more easily and at lower cost than the major NMS platforms, and is dedicated to power management functions.

  The manager of the UPS group has an overall, consolidated view of the main operating parameters of all the UPS systems. This information is accessible from any workstation using a standard Web browser.

  It can easily sort the UPSs according to the most critical parameters (location, system status, etc). Alarms are centralized and transmitted, if required, by e-mail, SMS or broadcast. The log of events and operations helps preventive management of the various UPSs.

- **Simple to deploy, and using industry standards**

  When installed, Enterprise Power Manager can carry out a scan for all the UPSs from MGE and other suppliers supporting the standard UPS MIB.

  The user is then presented with a layout that can be easily configured, as required, according to the type of UPS, location, operating status, etc.

- **An overall view of the UPS network & advanced power management**

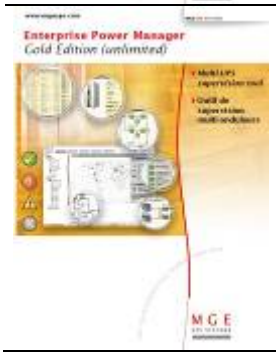
  Clicking on a UPS in the layout shows detailed information about the operating and configuration parameters in a dedicated window.

  Enterprise Power Manager uses Secure Sockets Layer (SSL) and several levels of password (administrator, user, etc) for complete security.

- **Simple, economical and scalable**

  A version limited to 5 UPSs is available free of charge on the MGE web site. This version can also be used to evaluate the software for a more extensive network before purchasing an Enterprise Power Manager for 50 or more UPS systems.

This document applies to the 3 commercial versions of Enterprise Power Manager:

	◗ 5-node	available free of charge on MGE web site and on Solution Pac 2 CD-ROM
	◗ 50-node	available on Management Pac 2 CD-ROM Part number 66923
	◗ Unlimited node	available on Enterprise Power Manager Gold Edition CD-ROM. Part number 66924

2 Installation and Configuration Procedure

2.1 Installation Prerequisites

2.1.1 On the System Hosting « Enterprise Power Manager »

Enterprise Power Manager can be installed on **Windows 2000/XP (Home or Pro) / 2003 / Vista / 2008**

Notes:

- **Windows_SP2:** We advise you against the use of Windows XP Service Pack 2 that only authorizes 10 simultaneous network connections. The discovery process will be much longer due to this limitation. (cf. Discovery time paragraph)
  For Windows XP Service Pack 2, we advise you to use the new Quick Scan feature

- For Windows XP SP2 you have to configure the network ports 80 and 443 (http & https) on the Windows Firewall

- To avoid network access conflicts, we advise you against installing the Enterprise Power Manager on a machine that also hosts a Network Management System (e.g. HP-Openview, CA Unicenter, …)

- To avoid access conflicts on Network ports 80 & 443 (Http & Https), we advise you against installing the Enterprise Power Manager on a machine that also hosts a Web server using these ports.
  If really necessary, these ports can be changed in
  C:\Program Files\MGE\EnterprisePowerManager\bin\webserver\conf\Config.pi3

2.1.2 On the System that Displays Web-based Graphical User Interface

The Enterprise Power Manager graphical interface can be accessed remotely using a simple Web browser. Access to this interface is secured through SSL connection (default configuration) and can also be secured through Login & password.

The Enterprise Power Manager graphical interface has been tested with:

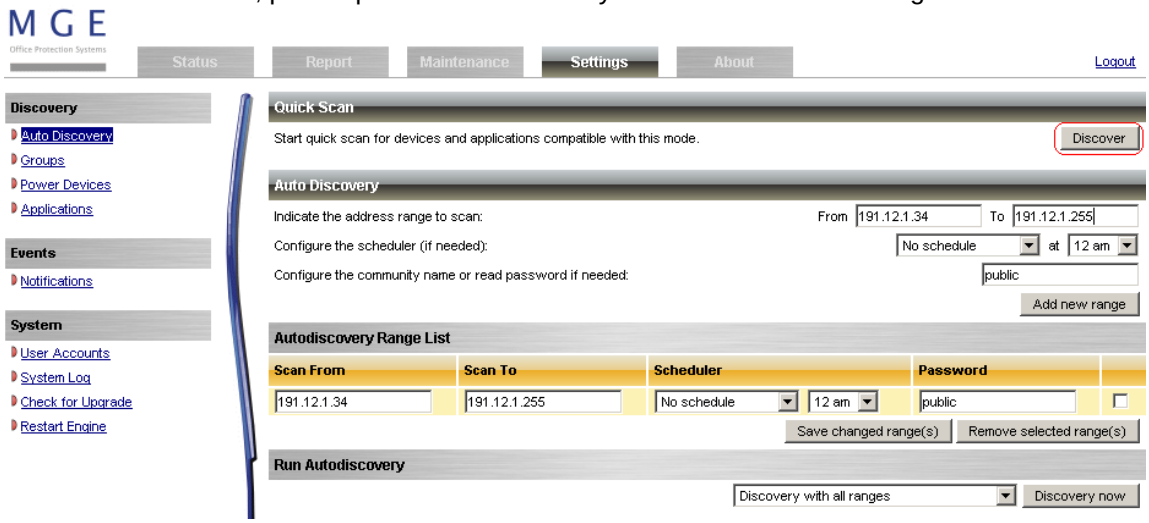
- Mozilla Firefox 1.5 & 2.0 (recommended for better performance)
- Microsoft Internet Explorer V6 & 7

2.2 Quick Start

To start device supervision in 5 minutes, please perform the following steps:

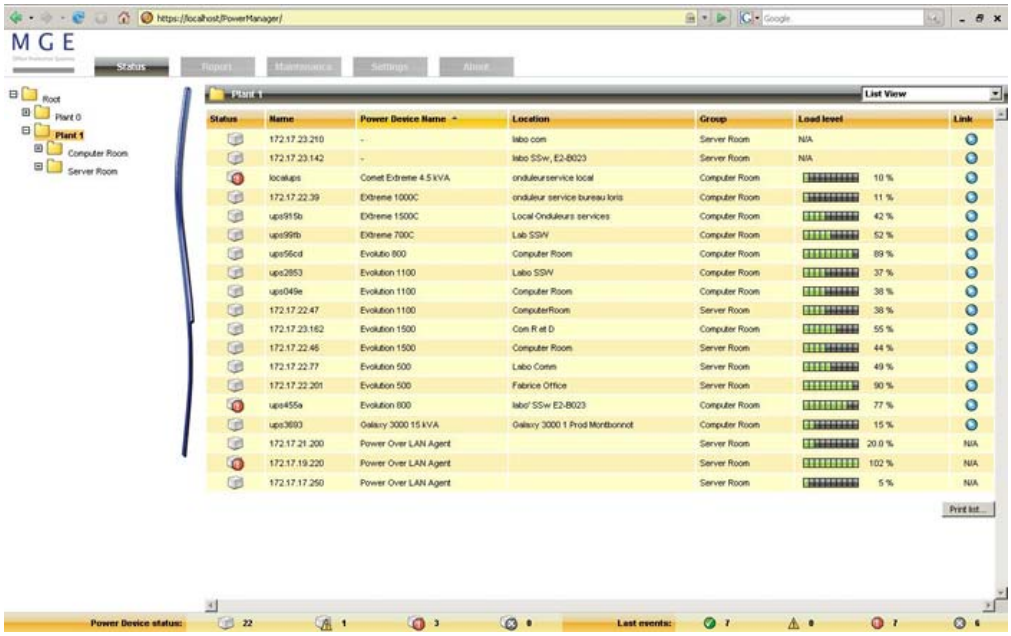
- **Step 1** (Installation)
  On a Windows 2000/XP(Home or Pro)/2003/Vista/2008 machine, execute the “Enterprise Power Manager” package under an administrator account.
  Note: If you use Windows XP Service Pack 2 or a Network Management System, please refer to the pre-requisites.

- **Step 2** (Configuration)
  From the **Settings** -> **Auto discovery** page, click on the **Discover** button.
  With this quick scan operation, you will discover within a few seconds: Network Management Cards ref 66074 & 66244 & 66102 /BA and Network Shutdown Module V3
  For the other devices, please perform the discovery based on IP address ranges



- **Step 3** (Optional configuration recommended for large installations)
  In the **Settings-> Groups** page, create one or several power device groups.
  In the **Settings-> Power Device** page, assign the discovered devices to the previously created groups.
  In the **Settings-> User Accounts** page, assign the access rights through “login and password”

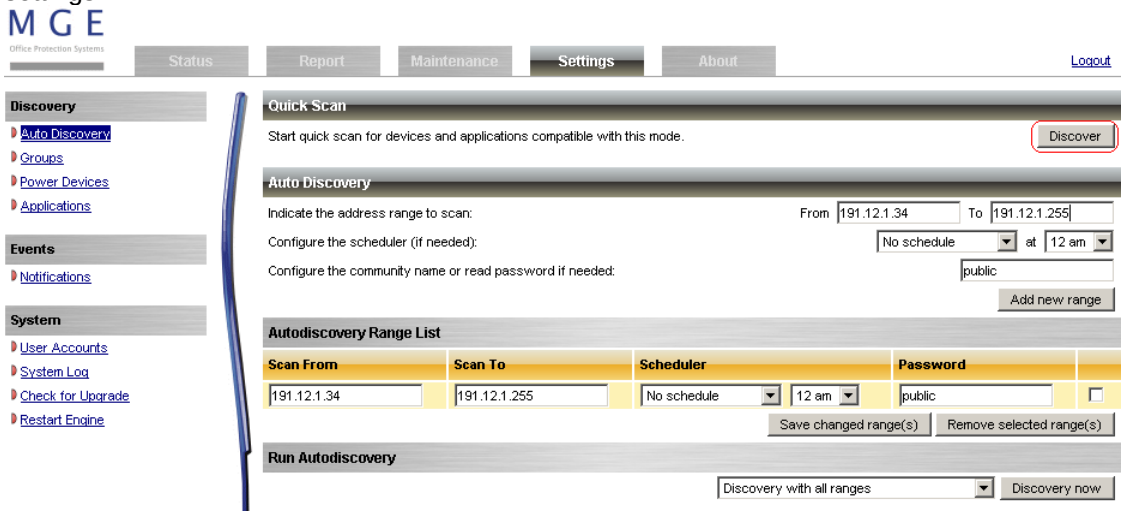
- **Step 4** (Operation)
  The **Status** tab allows you to supervise the current state of the compatible power devices.
  The **Report** tab allows you to view the device events.
  For these 2 tabs, the left tree allows you to access information device by device or group by group.


https://localhost/PowerManager/
MGE
Status
Reports
Maintenance
Settings
About
Root
Plant 0
Plant 1
Computer Room
Server Room
Plant 1
List View
Status
Name
Power Device Name
Location
Group
Load level
Link
172.17.23.210
labo com
Server Room
N/A
172.17.23.142
labo SSw, E2-B023
Server Room
N/A
localups
Comet Extreme 4.5 kVA
onduleur service local
Computer Room
10 %
172.17.22.39
EXtreme 1000C
onduleur service bureau loris
Computer Room
11 %
ups915b
EXtreme 1500C
Local Onduleurs services
Computer Room
42 %
ups99fb
EXtreme 700C
Lab SSW
Computer Room
52 %
ups56cd
Evolutio 800
Computer Room
Computer Room
89 %
ups2853
Evolution 1100
Labo SSW
Computer Room
37 %
ups049e
Evolution 1100
Computer Room
Computer Room
38 %
172.17.22.47
Evolution 1100
ComputerRoom
Server Room
38 %
172.17.23.162
Evolution 1500
Com R et D
Computer Room
55 %
172.17.22.46
Evolution 1500
Computer Room
Server Room
44 %
172.17.22.77
Evolution 500
Labo Comm
Server Room
49 %
172.17.22.201
Evolution 500
Fabrice Office
Server Room
90 %
ups455a
Evolution 800
labo' SSw E2-B023
Computer Room
77 %
ups3693
Galaxy 3000 15 kVA
Galaxy 3000 1 Prod Montbonnot
Computer Room
15 %
172.17.21.200
Power Over LAN Agent
Server Room
20.0 %
N/A
172.17.19.220
Power Over LAN Agent
Server Room
102 %
N/A
172.17.17.250
Power Over LAN Agent
Server Room
5 %
N/A
Print list...
Power Device status:
22
1
3
0
Last events:
7
0
7
6

2.3 Installation Procedure

- Download the package from http://download.mgeops.com
  (select Download tab, and then Software menu item)
  Or execute the software installer from a MGE CD-ROM containing the product

- Execute the package and follow the instructions.
  At the end of the installation, your Web Browser is started with an HTML page for **Auto discovery** settings.



Auto Discovery window

Two possibilities are offered to you for network discovery:

- **First possibility:**
  From the **Settings** -> **Auto discovery** page, click on the **Discover** button.
  With this quick scan operation, you will discover the following devices and applications within a few seconds:
  > Network Management Card ref 66074 & 66244 & 66102 (/BA min.)
  > Network Shutdown Module V3

Status	Device ID	Description	Location	Link
	172	Network Management Card / V_3_01_b	Computer Room	
	172	Network Shutdown Module / Windows / 3.00	-	
	172.	Network Shutdown Module / Windows / 3.00	-	
	172.	Network Shutdown Module / Windows / 3.00	-	
	172. [00-06-23-00-10-00]	Network Management Teleservice Card / AA	TELESERVICE	
	172.	Network Shutdown Module / Windows / 3.00	-	
	172.	Network Shutdown Module / Windows / 3.00	-	

Quick Scan window

For the other devices, please perform the discovery based on IP address ranges (as explained hereafter)

- **Second possibility:**
  From the **Auto discovery** page, enter the IP address range concerning the devices you want to monitor:
  > enter the first IP address of the range in the **first** area
  > enter the last IP address of the range in the **second** area
  > click on **Add new range** button
  > and click on **Discovery now** button (cf Windows_SP2 Note)

Notes:
- A bar will be displayed to inform you about the progress of the discovery process. (cf Windows_SP2 Note)
- You can enter several IP address ranges and start the auto-discovery on the selected range.
- You can assign a different community name to each IP range.

2.3.1 Configuration and Supervision

- Then 2 possibilities are offered to you:
  > you can create groups and assign devices to the group (cf. 4. Settings chapter)
  > or you can directly view **the "Enterprise Power Manager" main screen**. Click on the **Status** tab, and you will view the discovered devices.

2.3.2 Installation Result

- If you install a new EPM version without uninstalling the old one you will keep your database and your product information (number of nodes, …)

- At the end of the installation, the following shortcuts are created in the group:
  Start -> Programs -> MGE Office Protection Systems -> Enterprise Power Manager

Name	Description
MGE Enterprise Power Manager	Starts the main "Enterprise Power Manager" graphical interface
Uninstall MGE Enterprise Power Manager	Uninstalls the Program

- A service called « MGE Enterprise Power Manager – Acquisition engine» is also created for the Database Acquisition Engine. This program continuously polls the status of the MGE devices connected on the network. This service automatically starts on machine bootup.
  If for any reason this service is stopped, a Warning message (« Acquisition engine is stopped ») is displayed at the bottom of the main graphical interface. You can restart it from the Windows services or from the “Settings -> Restart Engine” window.
- A service called « MGE Enterprise Power Manager – Web Server» is also created and started.

2.4 Uninstalling The Product

- From the **Add/Remove** programs item of the control panel, execute the "Enterprise Power Manager" package.
- You can also uninstall from the shortcuts:
  Start -> Programs -> MGE Office Protection Systems -> Enterprise Power Manager -> Uninstall
  This will remove the database.

2.5 Upgrading The Product

Please refer to the Checking for Upgrades Paragraph.

3 Settings

3.1 Configure the MGE Network Management Cards (SNMP/Web) or Proxies

Each MGE Network Management Card or Proxy must have a valid IP address (or a DNS name) in the range that you have entered for auto-discovery. Refer to the list of compatible power devices.
“Enterprise Power Manager” automatically receives the alarms (through polling) without specific configuration on the cards or proxies.

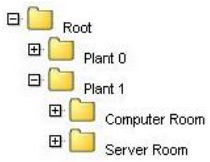
3.2 Enterprise Power Manager Settings

Start the "**Enterprise Power Manager**" main graphical interface from the previously created shortcut, then click on the **Settings** Tab.

3.2.1 Discover the Power Devices Connected on the Network

Please refer to the Installation procedure

3.2.2 Define Power Device Groups

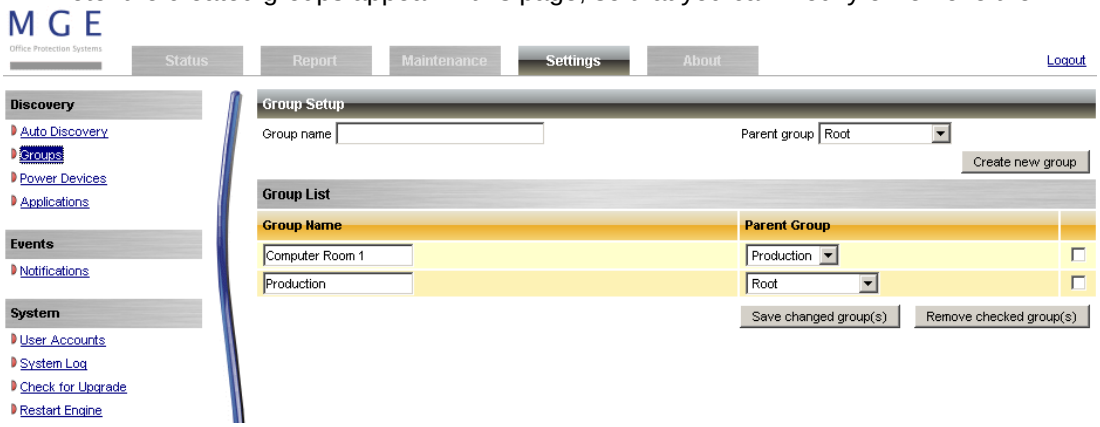


When you have to monitor large configurations, it is interesting to define several device groups and then to assign the devices to these groups.
You can select any criteria you want in order to organize your devices (i.e. geographical, organizational, ..)

When you have to monitor large configurations, it is interesting to define several device groups and then to assign the devices to these groups.
You can select any criteria you want in order to organize your devices (i.e. geographical, organizational, ..)

From the **Settings** tab, select the **Groups** menu item, then perform these steps:

- in this page, enter any group name: e.g. “Server Room" ;
- select the parent group if you want a multi-level organization
- then click on "Create new group" ;
- Note: the created groups appear in this page, so that you can modify or remove them.



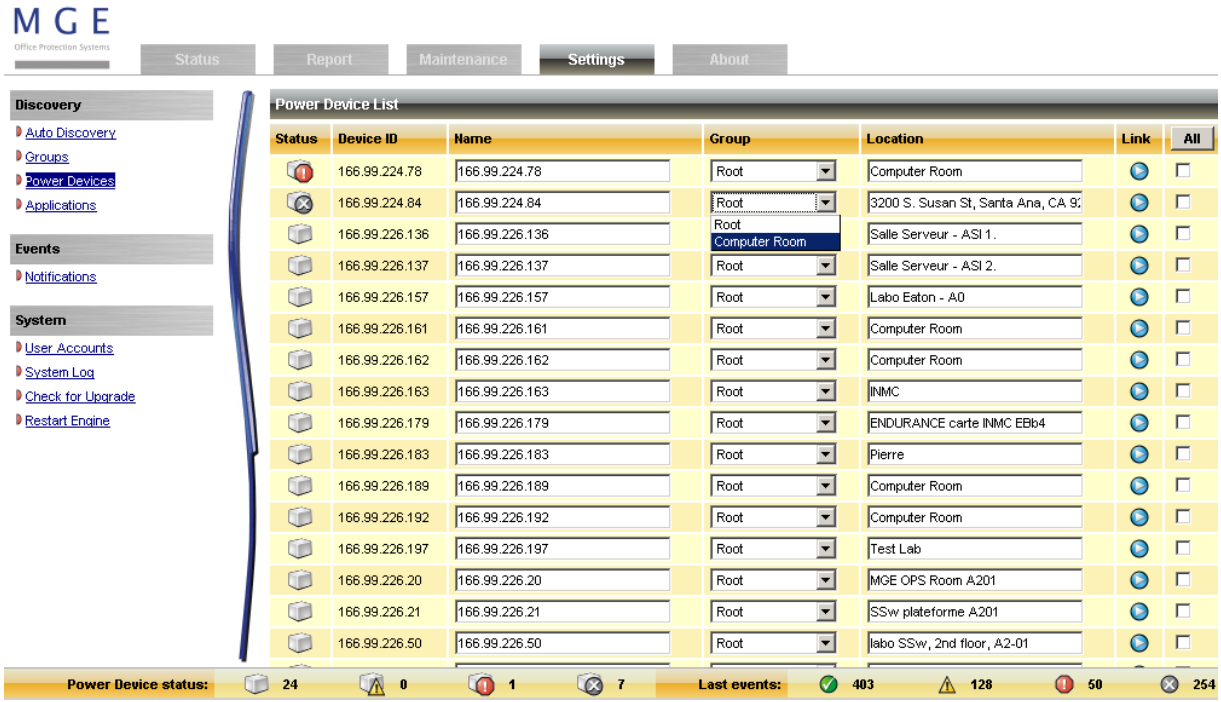
Groups window

3.2.3 Assign the Power Devices to the Groups

Now you can assign the devices to one of the created groups.

From the **Settings** tab, select the **Devices** menu item, then perform these steps:

- assign each device of the **Device List** to one of the previously created groups;
- click on the **Save Changed Items** button to apply the modifications.



Power Devices window

Now if you go back to the **Status** Tab, you will notice that the left tree takes into account your configuration. Under **Root** , select "DataCenter" (only the DataCenter devices will be displayed).

Notes:

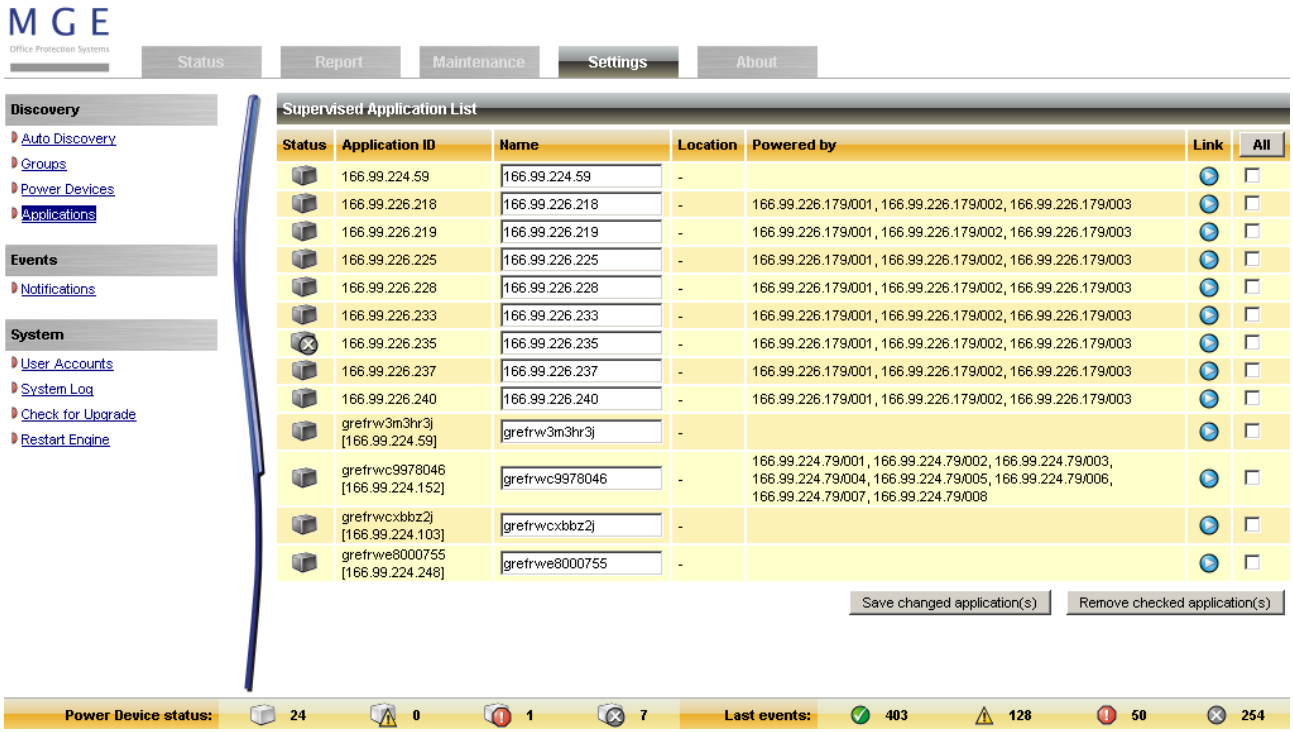
- From this screen, you can also modify the **Name** of the device and its **Location**. The modified values will be internal to the Enterprise Power Manager and will not be uploaded on the device.
- You have the possibility to remove the devices you don't want to monitor through the Enterprise Power Manager.
- A web link to the device is suggested.

3.2.4 Applications

With "Enterprise Power Manager V2", the servers (or other computers) hosting a "Network Shutdown Module V3" application can be supervised.

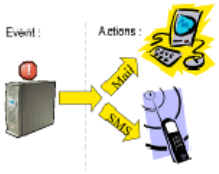
- From this screen, application names (**Name**) can be changed. The new values will be internal to the Enterprise Power Manager software.
- Applications you do not wish to supervise with Enterprise Power Manager can be removed.
- A Web link to the equipment is proposed.
- Click on the **Save changed application(s)** button to save the changes.

Application management window



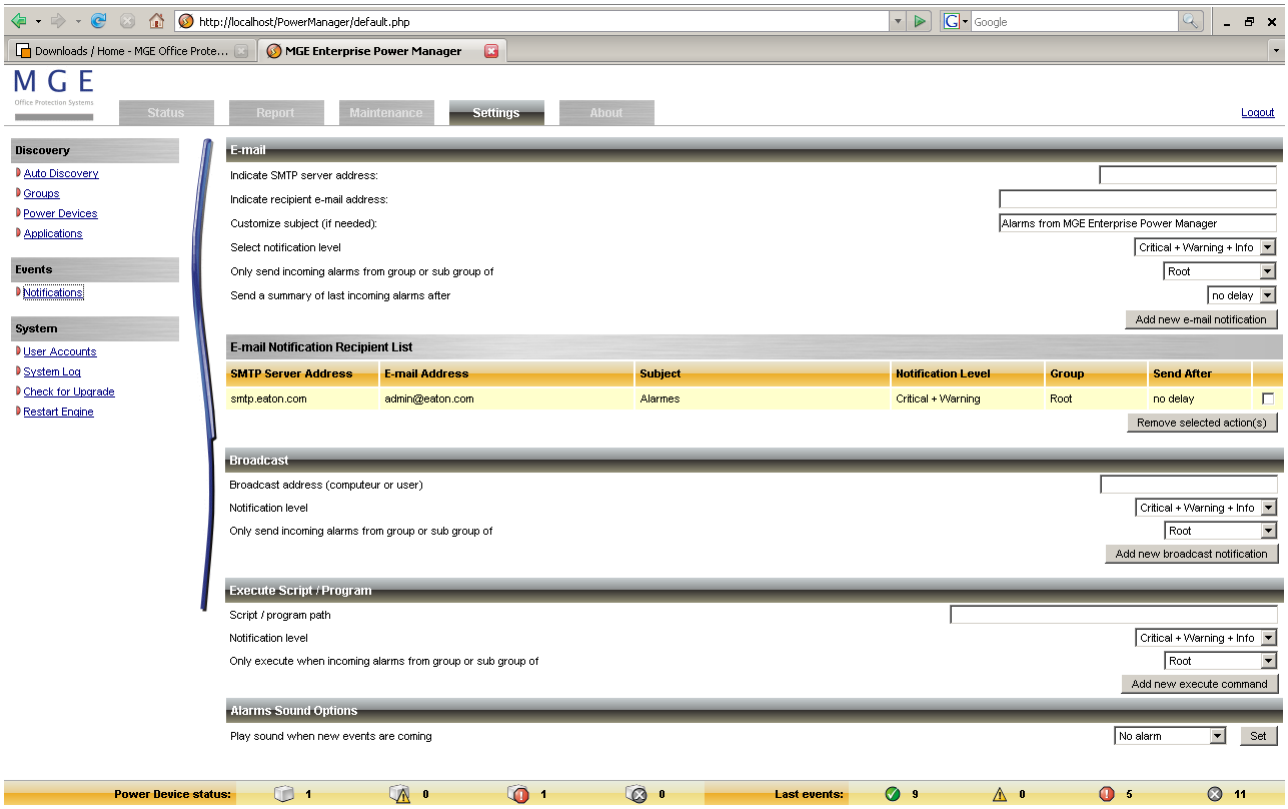
3.2.5 Configure Notifications

You can define the way users will be notified when device events happen.



From the **Settings** tab, select the **Notifications** item; the following channels are available:

- E-mail
- Broadcast
- Execute script/program
- Alarms Sound Options



Notifications window

Note on Notification Level parameter:
With this parameter, you can filter the notification according to the event level. Refer to the event list provided hereafter. Note that if you select “Critical” as filter you will also receive the associated “Normal” event informing that the device status changes from “Critical” to “Normal”.

E-mail:

To receive emails on UPS events:

- you have to indicate the **SMTP server address** and **recipient e-mail address;**
- you can filter the email notification according to:
  > the event level.
  > the device group (the sub groups are also included);
- then you have to click on **Add new e-mail notification.**

For advanced use:

- you can **Customize subject** if you have to translate e-mail into SMS for example,
- you can specify that you want to receive a consolidation of the alarms that occurred during a delay that you can choose (if you specify **no delay**, each alarm will generate an e-mail)

Broadcast:

To receive broadcast on UPS events (through Netsend command):

- you have to indicate the **recipient** (It can be either a Windows machine name or a user account);
- you can filter the broadcast notification according to:
  > the event level
  > the device group (the sub groups are also included);
- then click on **Add new broadcast notification.**

Note: Check that “Windows Messenger service” is started on the local and on the remote Windows machines. On Windows XP, 2003, 2008 it is not started by default.

Execute script/program:

To execute a program upon UPS events:

- you should firstly indicate its path;
- you can filter the program execution according to:
  > the event level
  > the device group (the sub groups are also included);
- then click on **Add new execute command.**

Note: The program is executed under SYSTEM account.

Alarms Sound Options:

To execute a sound alarm upon UPS events:

- you can filter the sound alarm according to the event level;
- then you have to click on **Set** button.

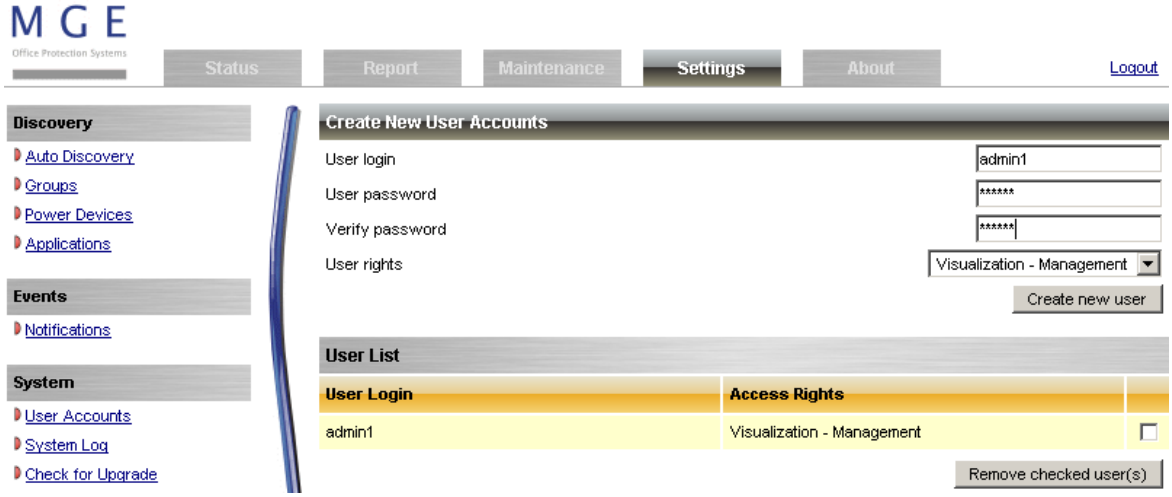
Note: These alarms are executed in the Web Browser context, so the Web browser has to be opened and pointing to a Web page of the Enterprise Power Manager.

3.2.6 Configure User Accounts

You can configure several user accounts.

From the **Settings** tab, select the **User accounts** item, then perform the following steps:

- enter the **User Login** and the **User password**:
- select the **User's Rights** level. The following levels are available:
  > **Visualization – Management** (the user will be able to access all the tabs)
  > **Visualization** (the user will only access the Status, Reports, Maintenance and About tabs)
- click on **Create new user** button



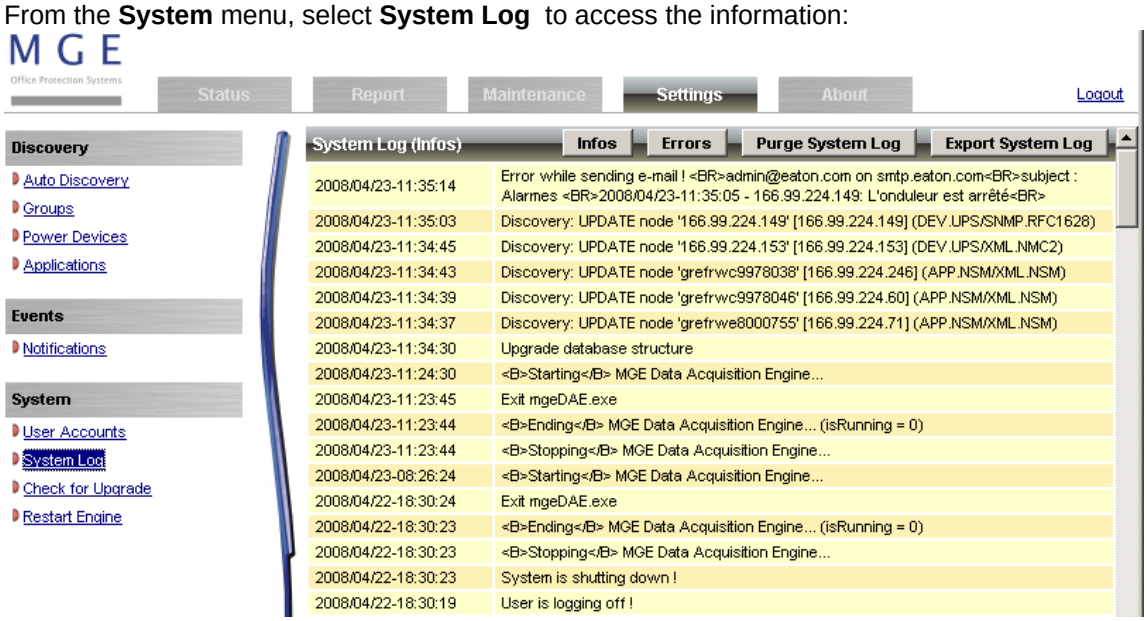
User Accounts window

Note: When you create user accounts with this interface, a "Logout" link appears in the right top section of the window. Use this link to exit from the application.

3.2.7 Consult System Log

You can have access to the **Enterprise Power Manager** internal log to explain some unexpected behavior. With the **Export system log**, you can save this log data as a file (csv is a file format useable with Microsoft Excel).

From the **System** menu, select **System Log** to access the information:



System Log window

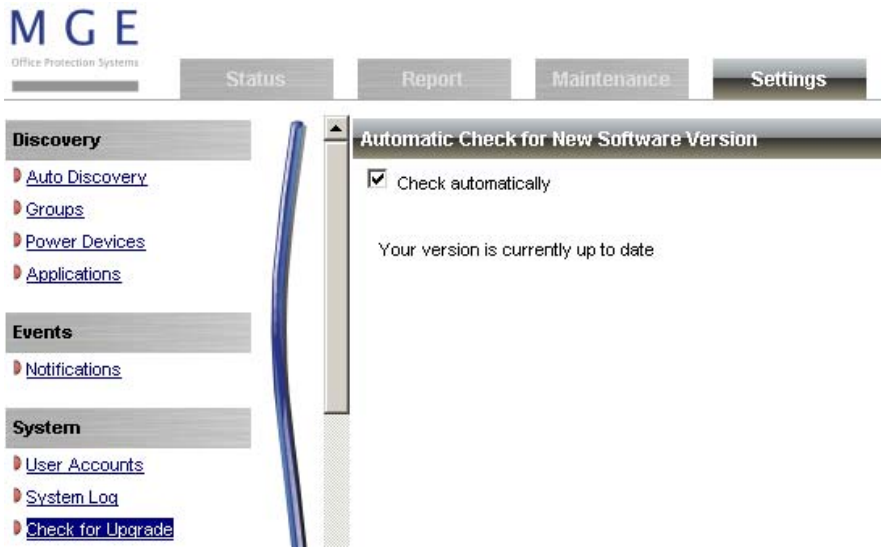
- **Advanced trace:**
  We warn you against the use of disk space for this Trace mode.

  To validate verbose mode :
  > in the **bin/dae** directory of the application, rename the file called **debugMode.off** into **debugMode.on**,
  > view the trace in the file called **traceDebug.txt** in the same directory.

  To stop verbose mode :
  > in the **bin** directory of the application, rename the file called **debugMode.off** into **debugMode.on**,
  > restart the service MGE Enterprise Power Manager - Acquisition engine.

3.2.8 Checking for Upgrades

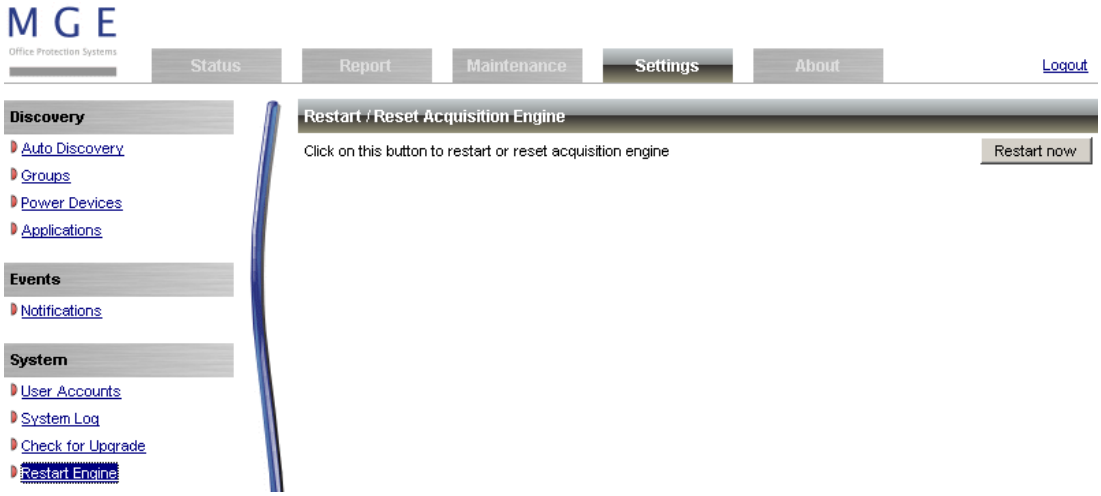
This function gives you access to MGE Office Protection Systems software updates.
Your Enterprise Power Manager will always be up to date if you select the **Check automatically** option.
When a new software version is detected on www.mgeops.com, just follow the wizard instructions.
Note: You will keep database information with this operation



Check for upgrade window

3.2.9 Restart Engine

With this function, you can remotely restart the Enterprise Power Manager acquisition engine. This function can be useful to detect device configuration changes or to reboot the acquisition Engine in case of any unexpected stop.



Restart Engine window.

4 Operation

4.1 Standard Supervision

4.1.1 Panel Organization

The supervision window is made of several areas as displayed below:

<table>
<tr><td></td><td colspan="2">Tabs:
|Status | Report | Maintenance | Settings | About | Logout</td></tr>
<tr><td>Menu
 </td><td colspan="2">View(s) (List / Detailed / Graphic / Graphic Editor / Powered Applications)</td></tr>
<tr><td colspan="2">Device status:</td><td>Last Events:</td></tr>
</table>

Menu area:
This menu is a tree with **Root** as base group that provides the following features to manage large configurations:

- from this area, you can filter the information access (should you have previously created groups and assigned the devices to these groups).

  For example, if you select a specific group, only the devices assigned to this group (and sub groups) will appear in the **List View**; if you select a specific device, only the information relative to the selected device will appear in the **Detailed View**.

  Note: once you have selected a device or a group in the Menu area, you can switch from tab to tab to view the Status, the Reports, the Maintenance information concerning the selected item.
  E.g. You can check the alarm list for a specific device group.

- the status severity is propagated to the parent group.

- if an icon is blinking, this means that new events have appeared that are not yet acknowledged. Once these events have been acknowledged, blinking stops.
  Note: On some browsers (e.g. IE on Windows Server 2003 and 2008), the animated pictures are disabled by default. You have to change this setting to view the icons blinking.

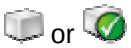
Devices status area: (always visible)
From this area, you have access to the following information:

- status breakdown of the devices;
- clicking on one of the icons will change it (the symbol is added).
  This means that we filter the access to the devices from this category. A device list view will be displayed when clicking on the icon.

  The filter function disappears by clicking again on the icon (the icon will disappear).

Device icon severity:

The icon in the different views represents the severity status of the managed device.

Icon	device status
	**Normal**. The status of the device is normal.
	Warning. A problem is active on the device. Your application is still protected.
	Critical. A serious problem occurs on the device. This problem requires an urgent action. Your application is NO LONGER protected.
	Communication lost between the card/proxy agent and **Enterprise Power Manager**. Or **communication lost** between the device and the Card/Proxy.
	Not managed. Due to license limitation this device is not supervised (possible for 5 nodes or 50 nodes versions)

Last events area: (always visible)

From this area, you have access to the following information:

- breakdown of recorded events according to their severity;
- list of events with the same severity level when clicking on the icon.
- clicking on one of the icons will change it (the symbol is added).
  This means that access to the events from this category is filtered. An Events list view will be displayed when clicking on the icon.
- The filter function disappears by clicking again on icon (the icon will disappear).

4.1.2 UPS Events list

The icons in the different views represent the event severity.

Icon	Event status
	Normal. With this event, the device is coming back to a normal status. **Event list:** ◗ Communication with "Management Card Proxy" is restored ◗ Maintenance task is done ◗ The system is powered by the utility ◗ The UPS output is on ◗ Communication restored with UPS ◗ Battery OK ◗ UPS returns to normal load ◗ UPS OK ◗ Bypass : Return on UPS ◗ End of low battery alarm ◗ Outlet group 1 is on ◗ Outlet group 2 is on ◗ Communication failure with environment sensor

- Communication restored with environment sensor
- Humidity is in normal range
- Temperature is in normal range
- Input #1 closed
- Input #1 opened
- Input #2 closed
- Input #2 opened

Warning. A problem occurred on the device. Your application is still protected.

Event list:

- Maintenance operation is needed"
- The system is powered by the UPS battery"
- Output on automatic bypass
- Output on manual bypass
- Humidity is below low threshold"
- Humidity is above high threshold"
- Temperature is below low threshold"
- Temperature is above high threshold"

Critical. A serious problem occurred on the device. This problem requires an urgent action. Your application might NOT BE powered anymore.

Event list:

- UPS output is off
- Outlet group 1 is off
- Outlet group 2 is off
- Battery fault
- UPS overload
- UPS fault
- Low battery alarm
- System shutdown in progress...

Communication lost between the card/proxy agent and the **Enterprise Power Manager**.

Or **communication lost** between the device and the Card/Proxy.

Event list:

- Communication with "Management Card Proxy" has failed (Warning)
- Communication failure with UPS (Warning)

4.1.3 Access to the monitoring interface

To monitor MGE devices already discovered on the network, start the main “Enterprise Power Manager” interface. You can access locally or remotely the same interface.

4.1.3.1 Local access

- From the system where the supervisor is installed, you can use the following shortcut:
  Start -> Programs -> MGE Office Protection Systems -> Enterprise Power Manager ->Enterprise Power Manager

4.1.3.2 Remote access

- From a remote machine, you can type the following URL in a Web browser
  https://<name or IP address of computer hosting EPM>/PowerManager/
  or
  http://<name or IP address of computer hosting EPM>/PowerManager/

  Note: The Web server is “case sensitive” for the URL

- In SSL mode, accept the certificate (by clicking on Yes)

Security Alert
Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.
The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority.
The security certificate date is valid.
The name on the security certificate is invalid or does not match the name of the site
Do you want to proceed?
Yes
No
View Certificate

Accepting the SSL Certificate

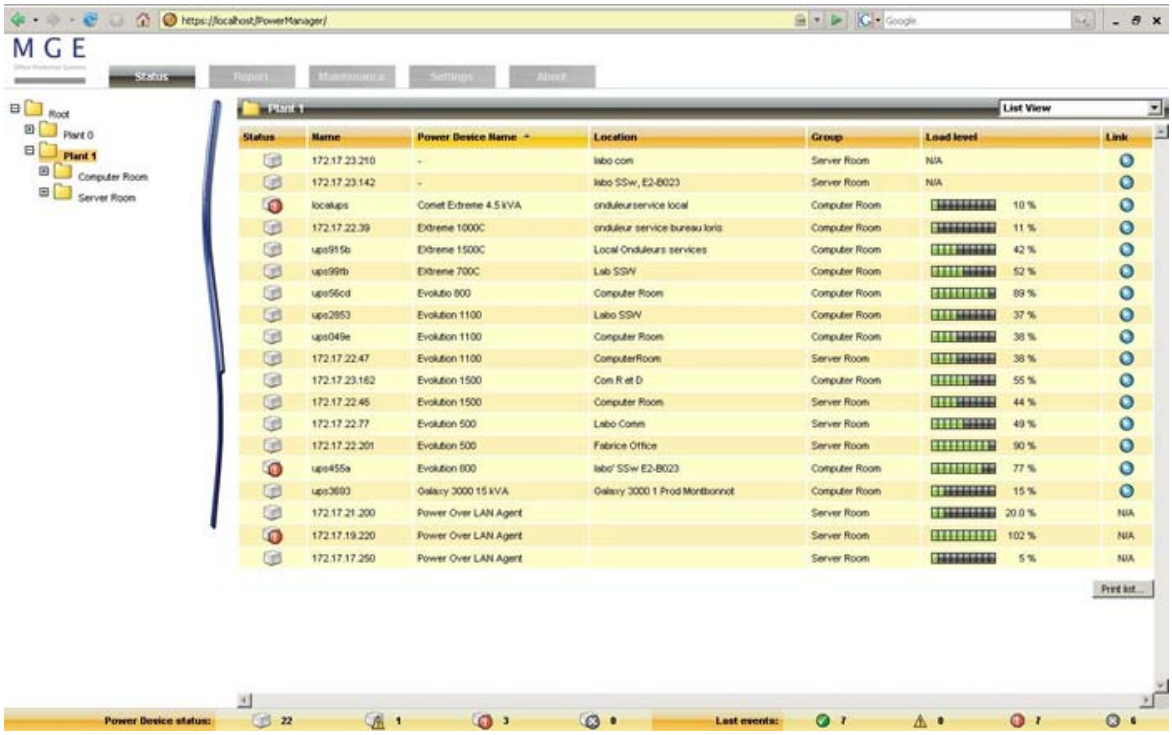
To install the certificate on IE7 for Vista, you need to perform the following steps:

> Run IE as an administrator (Right-click the desktop icon)
> Visit the EPM site.
> Click through the certificate error
> Click the "Certificate Error" button in the address bar.
> Click View Certificate
> Click Install Certificate
> Unlike on XP, you must click the “Place all certificates in the following store” radio button, and choose the “Trusted Root Certification Authorities” store. If you don’t do this, the certificate goes in your personal store, and it isn’t trusted by IE.

- Enter the Login and Password (optional)

- Select the **Status** tab, and the following page appears:
  (If you select in the menu a group icon, a list view appears. If you select in the menu a device Icon, a detailed view appears)

4.1.4 List view



List of MGE UPSs in Root group.

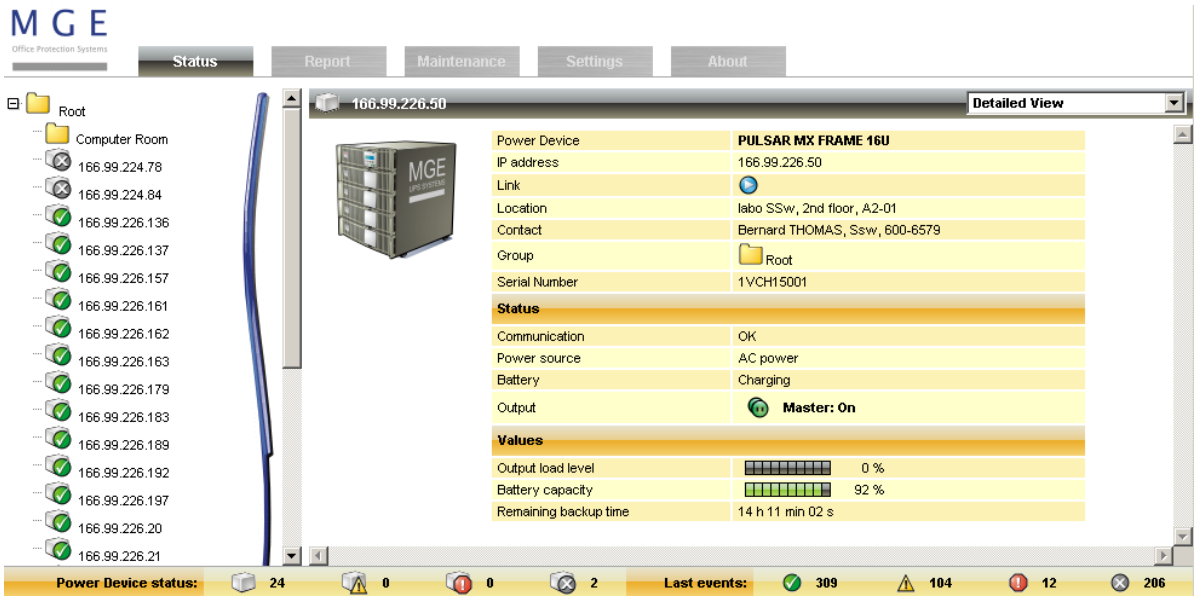
The following UPS information is displayed in this page:

- Status — this icon represents the severity of the monitored device;
- Name — the IP address (or the DNS name)
- Product name — the MGE product name
- Location — the device location (value of syslocation object or value configured in Device page)
- Group — the group assigned to the device
- Load Level — the output level of the device
- Link — link to the device Web site (if available)

Note: You can sort your device list by clicking on the column titles (Status / Name / Product Name/ Location / Group / Load Level)
A second click will reverse the sorting order.

4.1.5 Detailed view:

- Select one of the device in the left menu and the following “detailed view” page appears:



UPS Detailed View.

The following device information is displayed in this page:

- the DNS name (or IP address) is displayed near this icon
- Device — the commercial product name
- IP address — the IP address of the device
- Link — link to the device Web site (if available)
- Location — the device location (value of syslocation object or can also be configured in the Device page)
- Contact — the device contact (value of syscontact object or can also be configured in the Device page)
- Group — the group assigned to the device (Clicking on the Icon will display the group list view)
- Serial Number — The device Serial Number (if available)

Status

- Communication — Device communication status (OK / Network Communication Failure / device Communication Failure)
- Power source — AC Power / Battery
- Battery — Charging / Discharging / Need Replacement
- Output — Main output status (ON/OFF/Internal Failure/On Automatic Bypass/Manual By Pass/Overload)
  or output outlet status (ON/OFF)

Values

- Output Load Level — the output load level of the device
- Battery capacity — Battery capacity of the device
- Remaining backup time — the device remaining backup time

Environment: Environment Sensor (optional)

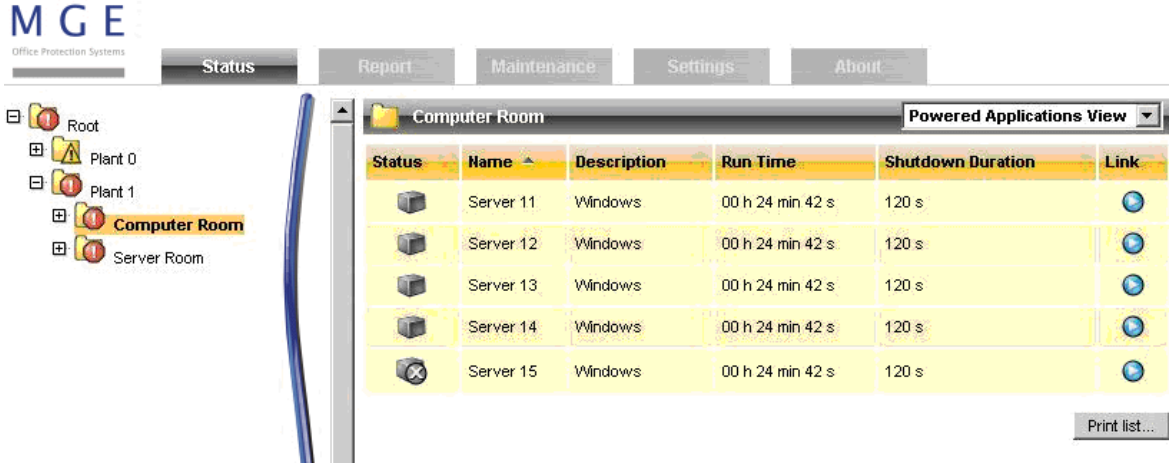
- Temperature — Sensor temperature (in °C)
- Humidity — Humidity level
- Input #1 — Status of first contact (open / closed)
- Input #2 — Status of second contact (open / closed)

Note that this view is impacted when any device status is affected,

4.1.6 Powered Applications View

Selecting **Powered Applications View** from the scroll down list at the top right of the screen displays a list of computer servers:

- powered by a UPS of the selected group
- and hosting a Network Shutdown Module V3 module



The following information appears in this page:

- Status — This icon represents the status criticality of the server.
- Name — Value configured in the Applications screen (by default this is an IP address or a DNS name).
- Description — Machine operating system.
- Run time — Operating time in the event of a utility supply loss.
- Shutdown duration — Duration, in seconds, needed by the system to carry out its shutdown procedure.
- Link — Link to the Web supervision interface of the Network Shutdown Module V3 module.

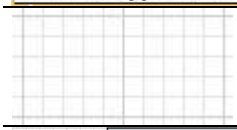
4.2 Customized Graphic View

4.2.1 Introduction

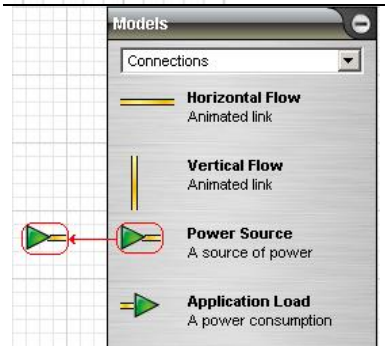
This simple and very powerful representation mode lets you create electrical supervision diagrams using a Web browser. Here you will find graphic view examples.

4.2.2 Steps for creating a "first" Graphic View

- Select a UPS group from the menu in the left zone of the screen.
- From the scroll down list (at the top right of the screen) change from **List View** to **Graphic View Editor**.



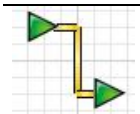
When in Graphic View Editor mode, a grid appears on the screen background to help you position the graphic objects.



From the **Models** tool box, select a category of graphic objects.
e.g. select the **Connections** objects.
In this section there are:

- horizontal electrical flows
- vertical electrical flows
- power sources
- application loads

From the tool box, use the mouse to select the graphic objects (one after the other) and drag and drop them onto the grid.



You are now able to create the following first diagram:
“A source electrically powers a load.”

To remove objects from the diagram:

- select the graphic objects using the mouse (one after the other)
- drag them into the **Garbage** tool box
- the object is deleted as soon as it is dropped

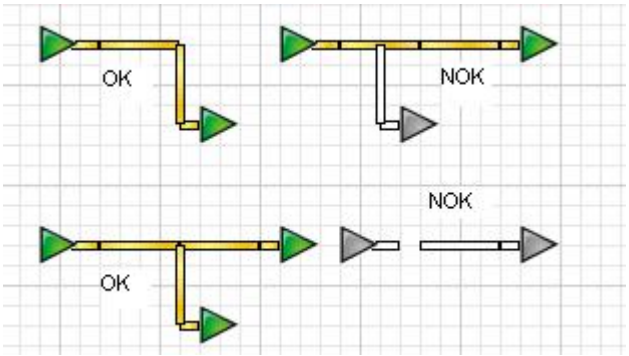
Note: Double-clicking on the garbage-can deletes the entire view.

4.2.3 Connecting and moving Flows

In **Graphic View Editor** mode, the mouse cursor changes shape depending on where it is positioned on the flow:

	The flows (horizontal or vertical) can be moved when picked-up in the middle. Cursor shape for a "Move" operation.
	The flows (horizontal or vertical) can be stretched when picked-up at their ends. Cursor shape for a "Stretch" operation

Important Note: Flows can only be connected together at their ends.
To help in detecting incorrect connections, a segment that is only connected at one end is white (instead of yellow).

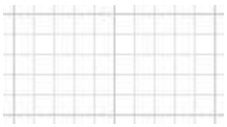


Examples of correct and incorrect connections

4.2.4 Build and use a supervision diagram

- The **Graphic View** supervision mode allows the diagram to be used (in **Graphic View Editor** mode).
- The **Graphic View Editor** mode allows an electrical supervision diagram to be built, changed or customised:

To go to "Graphic View Editor" mode:
From the scroll down list (at the top right of the screen) change from **List View** to **Graphic View Editor**.



In the Graphic View Editor mode, this grid appears on the screen background to help you position the graphic objects:

The positions of objects on the diagram are saved as it is built-up (warning: it is not possible to return to a previously saved version of your diagram).

To quit "Graphic View Editor" mode:
From the scroll down list (at the top right of the screen) change from **Graphic View Editor** to **Graphic View**.

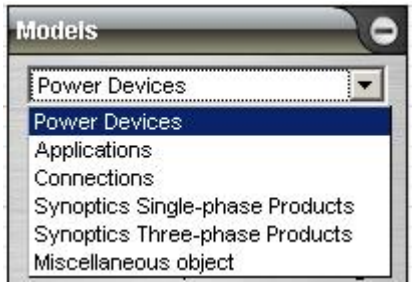
In **Graphic View Editor** mode, the three tool boxes (**Models**, **Properties** and **Garbage**) appear.
In **Graphic View Editor** mode, you can:

- create new objects in the Graphic View by dragging-dropping from the Models tool box
- Allocate a "Name" (or IP address) to a device using the Properties tool box
- Insert a background image using the Properties tool box
- move graphic objects (to connect electrical flow objects for example)
- Remove graphic objects from the card

Notes:

- By using the mouse, the three tool boxes (Models, Properties and Garbage) can be moved to a zone of your choice (drop & drag operation).
- The size of these boxes can be minimized and maximized by clicking in the -/+ zone of the title bar.

4.2.5 Graphic objects in the Models tool box



The following graphic objects are available in the Models tool box:

- **Power Devices** icons:

	Generic icon for a power device contained in the Enterprise Power Manager compatibility list (UPS, Static Transfer Switch, Switch PDU, Midspan, etc). This macroscopic icon provides: ◗ device status and name ◗ access to the last view selected for the equipment (Detailed View or Graphic View)
	Graphic icon (small size) for a power device (UPS only). This representation provides: ◗ device status and name ◗ device graphic ◗ the electrical connections ◗ the controlled outlets(*) ◗ access to the last view selected for the equipment (Detailed View or Graphic View)
	Graphic icon (large size) for a power device (UPS only). This representation provides the same information as the icon above.

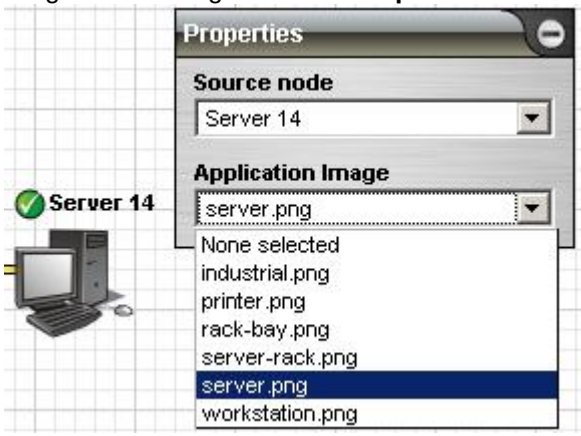
Note (*): If the UPS has controlled outlets, several electrical flows are proposed at the output. They represent the status of the main group, the controlled outlets 1 group, the controlled outlets 2 group, etc.

- **Applications**:

	Graphic icon for a computer server with single-input power supply. This representation provides: ◗ the name and status of the server hosting a Network Shutdown Module V3 ◗ server graphic (**) ◗ the electrical connections (power supply) ◗ a link to the supervision interface

	Graphic icon for a computer server with dual input power supplies. This representation provides: ◗ the name and status of the server hosting a Network Shutdown Module V3 ◗ server graphic (**) ◗ the electrical connections (**two** power supplies) ◗ a link to the supervision interface
	Graphic icon for an "industrial process" type critical application This representation provides: ◗ a representation of a "Network Shutdown Module" type application **without** communication module ◗ the possibility of customizing the application name or application graphic (**) using the **Properties** tool box

Note (**): The graphic representation of one of these applications can be changed by selecting the application and then choosing another image from the **Properties** tool box.



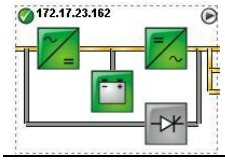
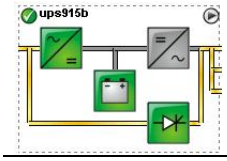
Changing server graphic representation

◗ Electrical **Connections**:

	Electrical flow icon (horizontal or vertical). This object can have different status.
	Electrical power source. This object can have different status.
	Electrical load. This object can have different status.

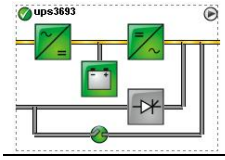
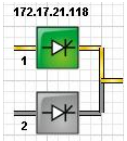
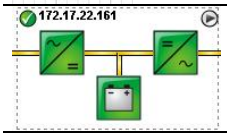
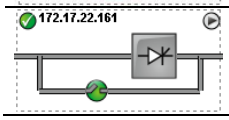
- **Block diagrams for single-phase products**:

This representation allows the following to be displayed:
- current flow in the device
- the different status of each module (by colour code)
- single-phase electrical measurements associated with each module
- the status of controlled outlets (*)

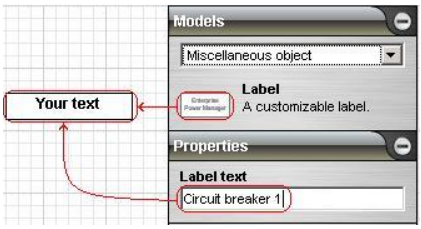
	Block diagram of a single-phase On-Line UPS with 1 incoming supply.
	Block diagram of a Line Interactive or Off-Line UPS with 1 incoming supply.

- **Block diagrams for three-phase products** (UPS and Static Transfer Switch):

This representation allows the following to be displayed:
- current flow in the device
- the different status of each module (by colour code)
- three-phase electrical measurements associated with each module (except for STS)

	Block diagram of a three-phase UPS with 2 incoming supplies.
	Block diagram of a three-phase source changeover device - "Static Transfer Switch".
	Block diagram of a three-phase UPS with 1 incoming supply
	Block diagram of a Static Switch Cabinet (Device Supported as Beta)

- **Miscellaneous objects**:



To add customized labels to your graphic view, proceed as follows:

- take the graphic object **Label** and drag it to the graphic view
- select the object
- select the text using the **Properties** tool box
- this text is updated in the box when the "Enter" key is pressed or when another object is selected
- Note: the box can be re-sized

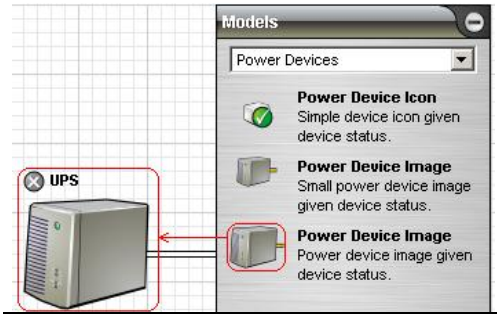
Note: In **Graphic View** supervision mode, two types of Web links are proposed:

	External link to the power device or application Web server
	Link in the supervisor to the last selected equipment view (Detailed View or Graphic View)

4.2.6 Allocating a "name" to a "Power Device" or an "Application"

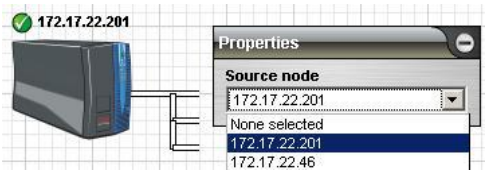
When in Graphic View Editor mode for a card, a "Name" must be allocated to each graphic object representing a Power Device or an Application (computer server hosting a Network Shutdown Module).
Note: this "Name" is the value configured in the Power devices or Applications screens (by default this is an IP address or DNS name).

Proceed as follows:

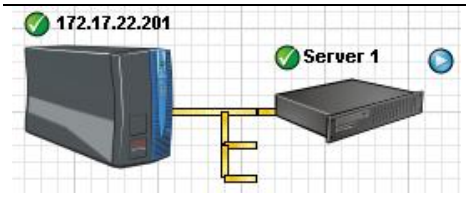


In the **Models** tool box:

- select a category, e.g. **Power Devices,** and then a graphic
- using the mouse, drag and drop the object onto the grid



- click on the graphic object
- the **Properties** tool box is refreshed with the object properties
- select a name from the scroll down list
- the object is updated with the object's real properties (Status, Device Name, etc)



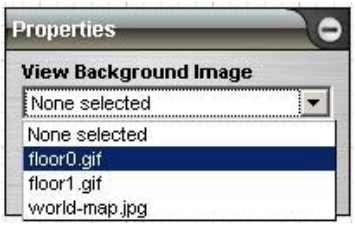
To finalize the diagram:

- from the **Models** tool box, select **Applications**
- drag a server object onto the card and connect it electrically to the UPS
- allocate a "name" to the computer server
- insert a background image
- go to Graphic View Supervision mode

4.2.7 Inserting a background image

When in Graphic View Editor mode on the card, you are able to import a background image.

Proceed as follows:



- click on the screen background grid
- the **Properties** tool box is refreshed with the object properties
- select an image from the scroll down list
- the result is displayed on the screen background

- use a design software to create your own background image (gif, jpg, etc format) suitably sized for your supervision screen
  For a 1280x1024 screen (**recommended**), image size is 1000x700
  For 1280x1024 => image 760x460
- click on the **Upload** button and add the new image file to the list using the selection box
- select this new image from the scroll down list

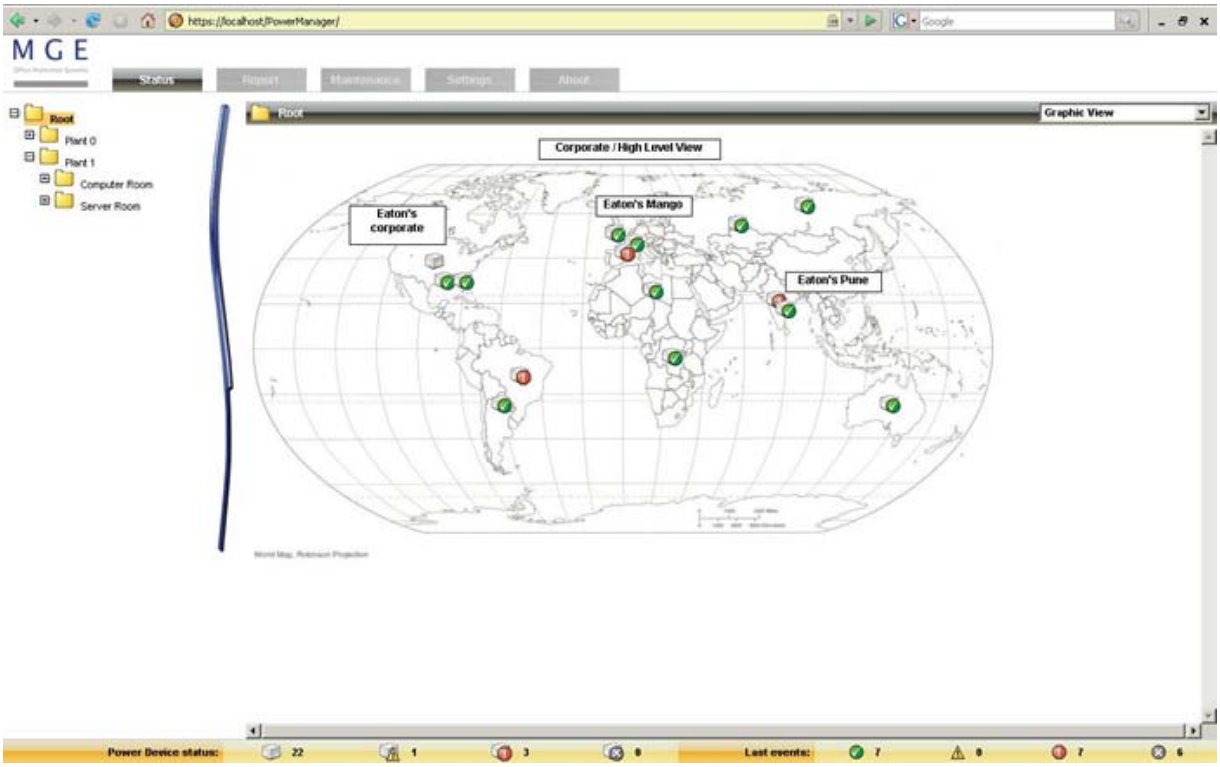
- Go to Graphic View Supervision mode

4.2.8 Examples of Graphic Views

You can make up your own supervision interface using the following graphics tools:

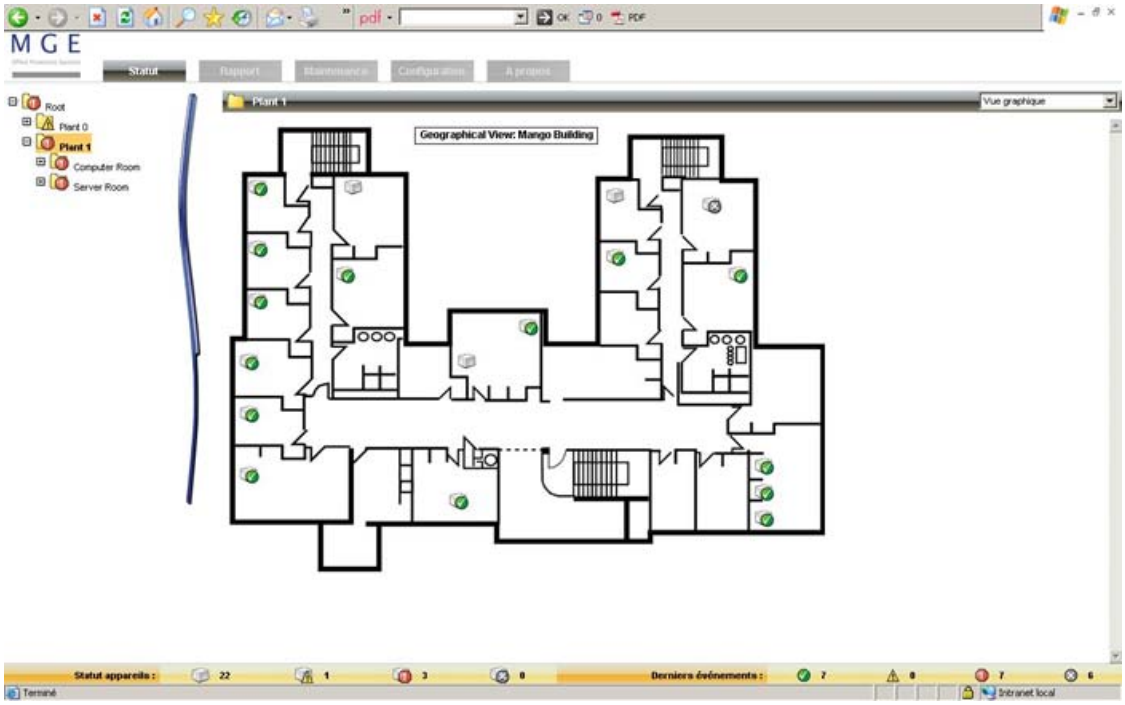
- graphic objects to represent UPSs, applications, flows, etc
- background image

Here are several examples of customized representations ranging from a macroscopic view of UPSs to a detailed electrical view.

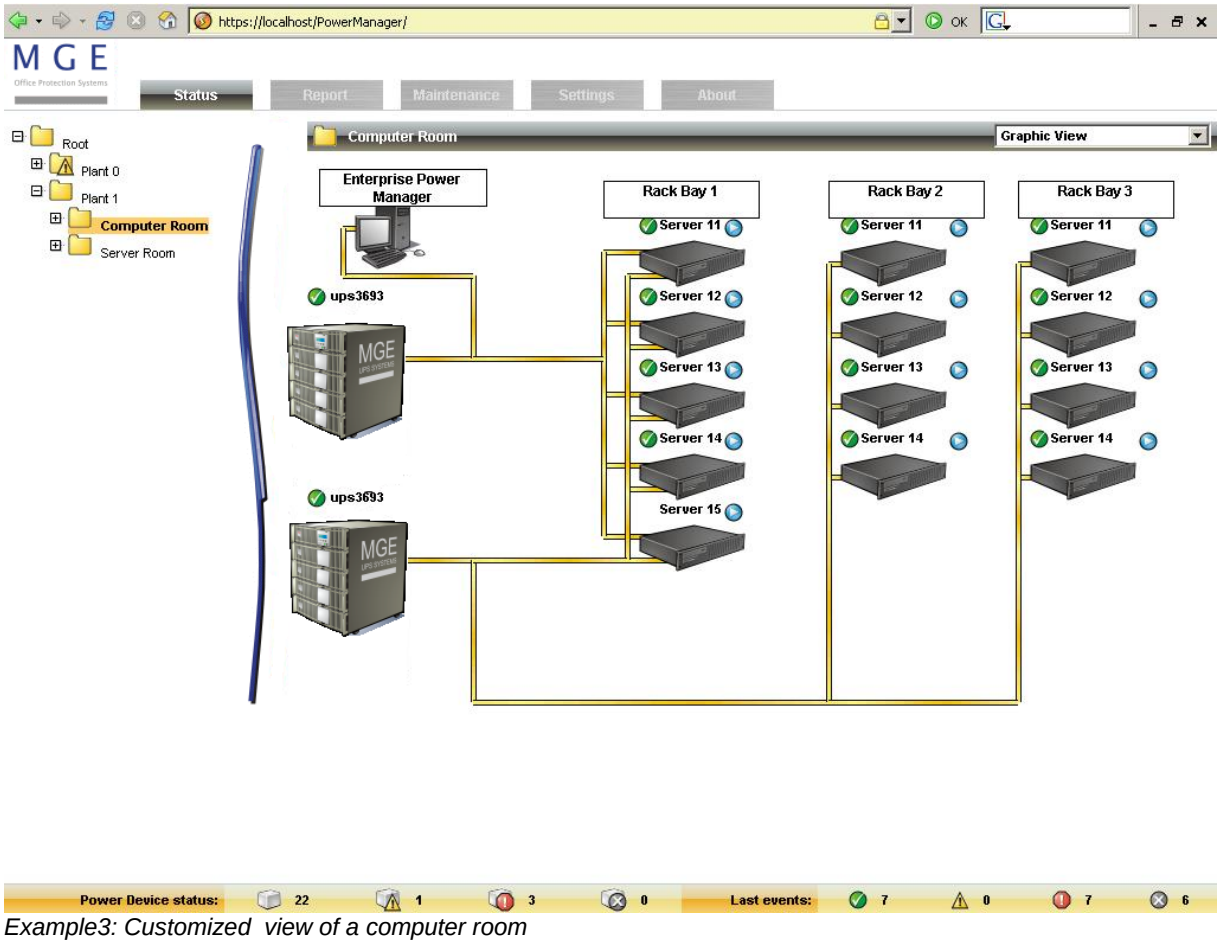


Example 1: UPS "Macroscopic" view

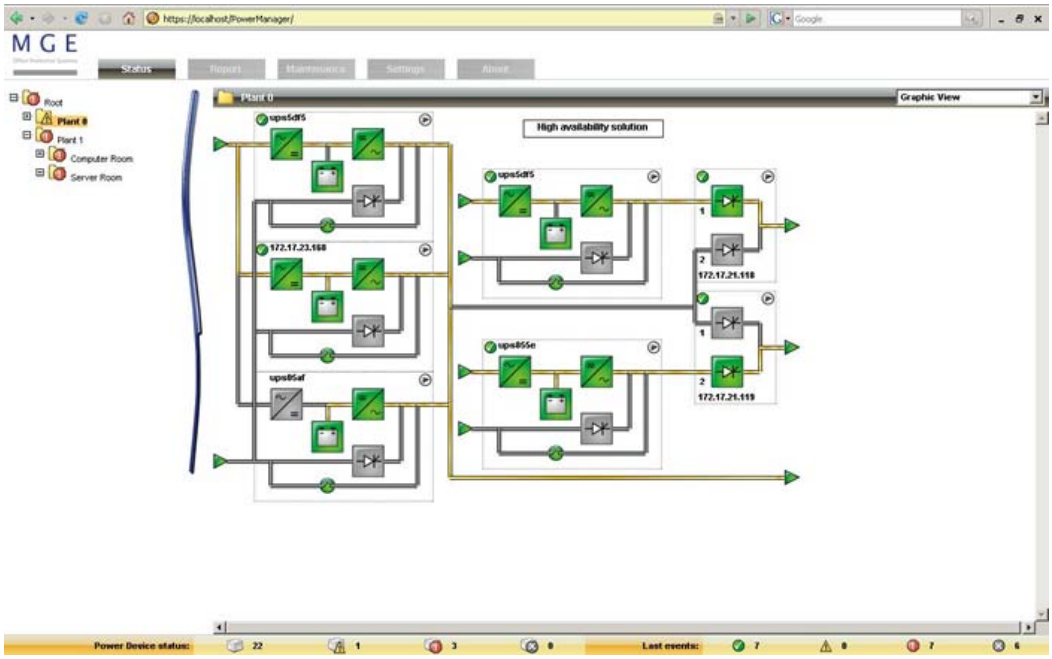
Note: A "macroscopic" view can be created in the "root" group. In a lower level group, a more detailed view can be created with the same UPSs, as shown in the following examples:



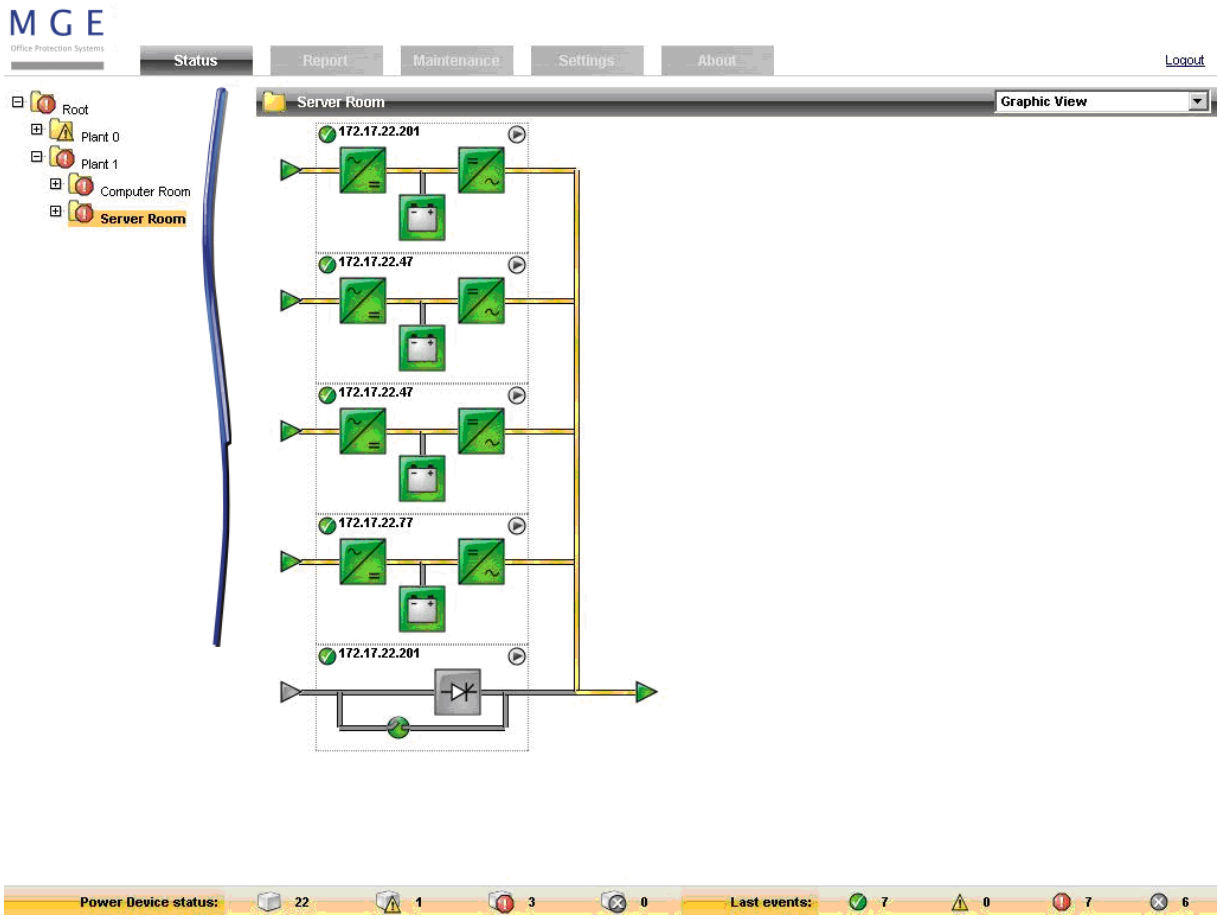
Example 2: Intermediary customized view (floor drawing with building electrical distribution diagram)



Example3: Customized view of a computer room



Example4: Customized detailed electrical view



Example5: Customized detailed electrical view

This screen allows the following to be displayed:

- status of device modules using colour codes

- current flows in the electrical diagram
- electrical measurements of each module

4.2.9 Electrical measurements of each module

When the mouse passes over a UPS module, the following contextual window appears. It automatically disappears when the mouse is moved to another area.
By double-clicking on a module, the window is permanently displayed and its background colour changes. By double-clicking again on the module in question, the window returns to its original status (displayed as the mouse passes over it).

For three-phase UPSs, the following measurements are available for:

- The Normal AC input module

Normal AC Measures on 'ups5df5'			
Voltage	399.0 V	400.0 V	401.0 V
Current	0.0 A	0.0 A	0.0 A
Frequency			50.0 Hz

- The output module

Output Measures on 'ups5df5'			
Output load level			84 %
Active Power			18 kW
Apparent Power			24 kVA
Power Factor			0.77
Voltage	400.0 V	401.0 V	402.0 V
Current	30.0 A	31.0 A	32.0 A
Frequency			51.0 Hz

- The battery

Battery Measures on 'ups5df5'	
Remaining capacity	100 %
Remaining time	00 h 15 min 15 s
Voltage	321.0 V
Temperature	23 °C

- The By-Pass AC module

Bypass AC Measures on 'ups5df5'			
Voltage	402 V	403 V	404 V
Current	2.9 A	3.0 A	3.1 A
Frequency			52.0 Hz

For single-phase UPSs, the above measurements are only available for a single phase.

4.2.10 Server supervised data

When the mouse passes over the icon of a server hosting a Network Shutdown Module V3, the following contextual window appears. It automatically disappears when the mouse is moved to another area.

By double-clicking on the server icon, the window is permanently displayed and its background colour changes. By double-clicking again on this server, the window returns to its original status (displayed as the mouse passes over it).

Status	**Application is protected** **Protected sources: 1 + 1 redundant(s)**
Description	**Windows**
Software	**Shutdown Module V3.0**
Autonomy	**00 h 24 min 42 s**
Source	**ups049e** **ups2853**

Supervised data of a Network Shutdown Module

The **Status** can have the following values:

Icon	Signification
	Application protected (normal status)
	Application Not Protected (e.g. the UPSs feeding the application are in By-Pass mode)
	Loss of redundancy (e.g. the number of redundant UPSs is less than the desired one)
	Loss of communication (between the "Enterprise Power Manager" and the "Network Shutdown Module")

4.2.11 Colour codes for each module

- UPS modules:

AC/DC	DC/AC	By-Pass or STS module	Colour	Description
			Green	Status OK & Active
			Red	Internal fault & Inactive
			Grey	Status OK & Inactive or Unknown

- Battery module:

Symbol	Colour	Description
	Green	Status OK
	Orange	Battery charge is less than 50%
	Red	Battery fault or End-of-backup or End-of-battery-service-life pre-alarm
	Grey	Battery status unknown

- Electrical flows:

Symbol	Colour	Description

	Yellow	Current flow through the cable Note: the object animation gives the direction of current flow
	Grey	No current flow through the cable (voltage may be present)
	White	Object not connected at one of its ends This "abnormal" status provides help to detect connection errors in the electrical diagram.

- Electrical power source at UPS input:

Symbol	Colour	Description
	Green	Source powered. Status OK
	Grey	Source not powered or status unknown
	Examples of combinations between flow status and power source status:	
	Green/ Yellow	The electrical power source is powered and provides electrical flow
	Green/ Grey	The electrical power source is powered and does not provide electrical flow
	Grey/ White	Power source not powered or status unknown and electrical flow not connected.

- Load at UPS output: (its status is linked to that of the UPS output status)

Symbol	Colour	Description
	Green	Load powered and protected. Status OK
	Red	Load not powered
	Grey	Load status unknown
	Examples of combinations between flow status and load status:	
	Yellow/ Green	Load powered and protected
	Grey/ Red	Load not powered
	White/ Grey	Load not powered or status unknown and electrical flow not connected

- Switches:

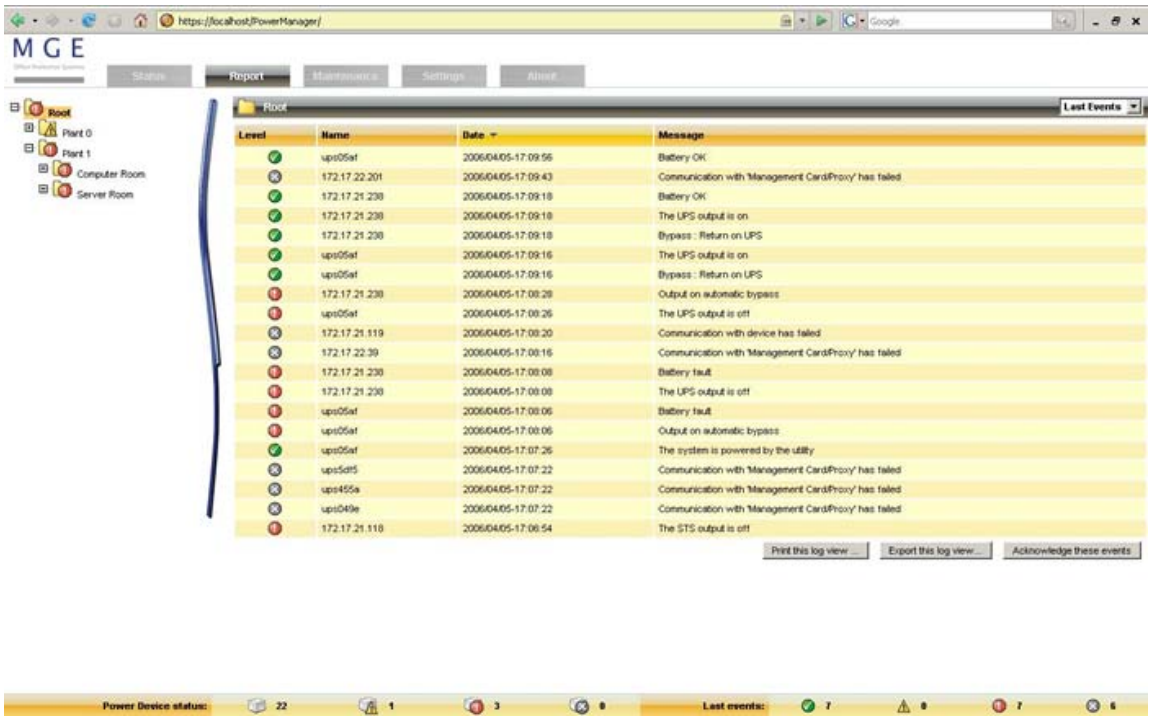
Symbol	Colour	Description
	Green/ Yellow	Closed with current flowing through it (Status "normally closed")
	Green/ Grey	Closed with no current flowing through it (Status "normally closed")
	Red/Grey	Open with no current flowing through it (Status "normally closed")
	Green/ Grey	Open with no current flowing through it (Status "normally open")
	Red/ Yellow	Closed with current flowing through it (Status "normally open")
	Red/Grey	Closed with no current flowing through it (Status "normally open")
	Grey/Grey	Unknown

- Outlets:

Symbol	Colour	Description
	Green	Powered
	Red	Not powered

4.2.12 Last Events / History / Statistics

Select the **Report** tab, then **Last Events Log** and the following page appears:



Last Alarm list for the devices of your network area.

You can supervise following events:
- the UPSs
- the Network Shutdown Module
- the Static Transfer Switch
- the MGE Midspan & PowerDsine
- the Switch PDU
- the Rack Monitoring Systems

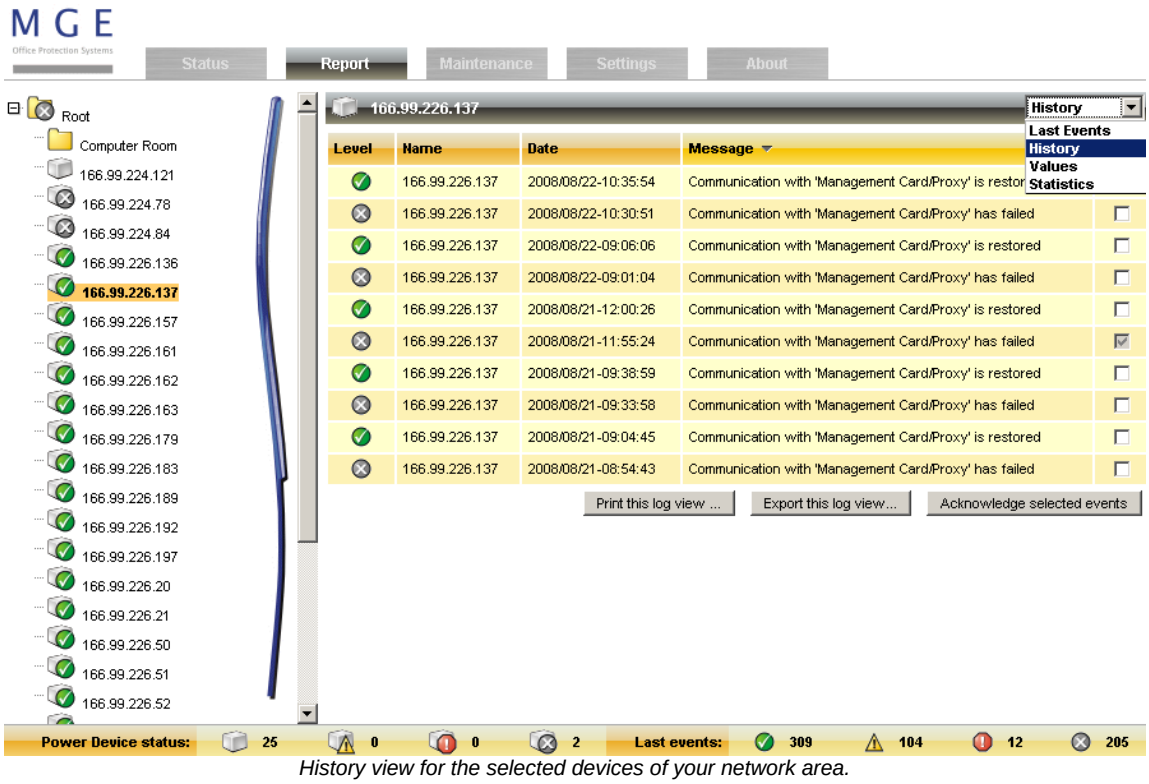
All the new alarms recorded for the selected device or for the selected group are stored in this log.

You can sort out the alarms according to the **Level**, the **Name**, the **Date** or the **Message.**

You have access to these 3 functions:
- **Print this log view …** prints this information
- **Export this log view …** saves this log data in a file (csv is a file format useable with Microsoft Excel).
- **Acknowledge event(s)** removes events displayed on this view. This operation updates the **Last events** count; now these events can be viewed from the History view

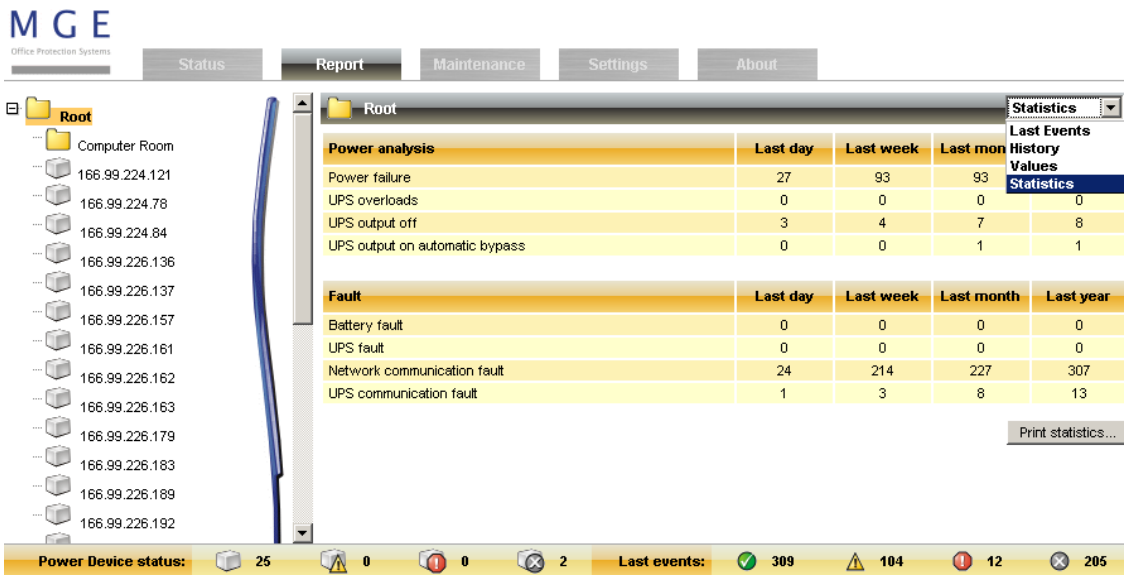
Note:
- "Print" and "Acknowledge" functions will be performed on the 1000 last events
- If more than 1000 Non-Acknowledged events are stored, the "Acknowledge all Events" additional button appears. This button is used to acknowledge non-displayed events.

History selection in the Combo box displays the Acknowledged and the non-Acknowledged events (see next Window);
All the events recorded for the selected device or for the selected group are stored in this log.



History view for the selected devices of your network area.

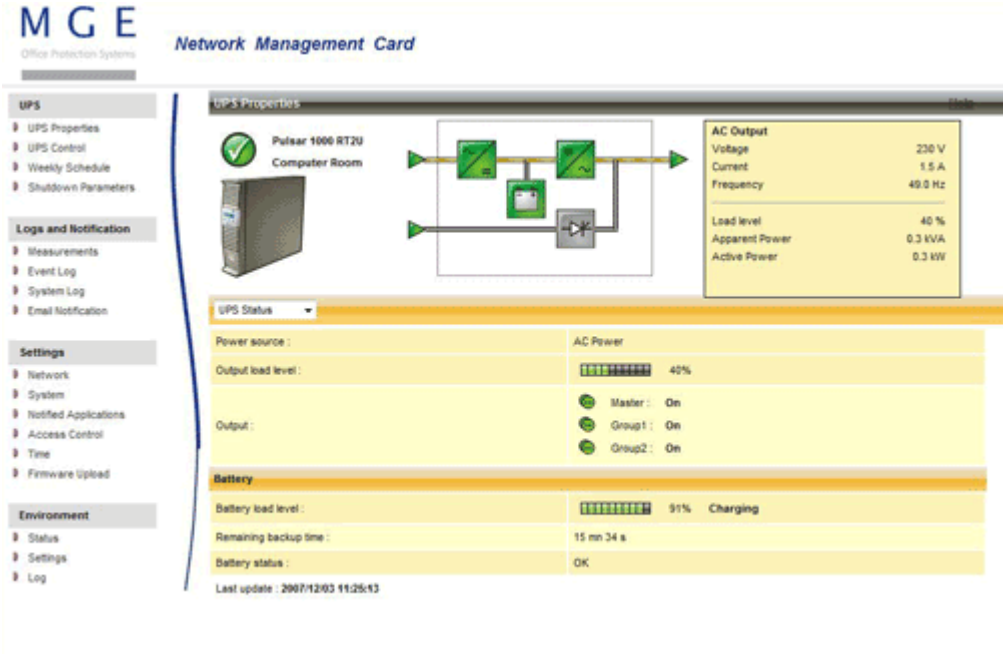
The **Statistics** selection in the Combo box displays power event statistics (see next screen);
The statistics view applies to the selected device or to the selected group.



Statistics view for the selected devices of your network area.

Launching UPS Properties from “Enterprise Power Manager”

From the **Status** tab (list or detail), you can access the UPS properties Web Page for MGE proxies or cards including an on-board web server (see detailed list in the following paragraph). Click on the web **Link** associated to this icon .



Running the “UPS properties" from Enterprise Power Manager.

4.3 Devices Compatibility List

Eaton - MGE Office Protection Systems has tested the compatibility of Enterprise Power Manager with the following devices:

4.3.1 Eaton & MGE Office Protection Systems Devices

Eaton & MGE Office Protection Systems equipment designation	Type	Accessing device Web server
Network Management Card Minislot SNMP/Web – 66102 And associated Environment Sensor 66846	UPS Option Card	OK
Network Management Card Transverse SNMP/Web – 66074 And associated Environment Sensor 66846	UPS Option Card	OK
Network Management Card & Modbus/JBus – 66103 (through Ethernet Network) (****) And associated Environment Sensor 66846	UPS Option Card	OK
ConnectUPS- Minislot Network Management Card / ref 103006826	UPS Option Card Eaton	OK
Eaton ePDU Monitored (*****)	PDU Integrated Communication Card	OK
Eaton ePDU Managed (*****)	PDU Integrated Communication Card	OK
MGE Switched PDU NM - 68130 / 68134/56132/56134/56136/56138 (*)	PDU Integrated Communication Card	OK
MGE AmpMeter PDU NM - 68152/ 56134/56144 (*)	PDU Integrated Communication Card	OK
MGE Midspan NM - 66892 (*)	Midspan Integrated Communication Card	OK
Network Management Proxy(Windows) XML-Agent	Proxy	OK
SP WAN – UM Agent	Proxy (legacy)	na
Network Management Card Minislot SNMP/Web – 66244 And associated Environment Sensor 66846	UPS Option Card (legacy)	OK
XML-Web card – 66073 (legacy for UPSs)	UPS Option Card (legacy)	OK
SNMP card – 66245	UPS Option Card (legacy)	na
SNMP card – 66062	UPS Option Card (legacy)	na
UM-Link – 66850	UPS Option Card (legacy)	na

na: not applicable.

* *Enterprise Power Manager 1.10 release and above*

*** *Enterprise Power Manager 2.00 release & above*

**** *Enterprise Power Manager 2.06 release & above*

***** *Enterprise Power Manager 2.10 release & above*

4.3.2 Computers

Equipment designation	Accessing device Web server

All computers (Windows/Linux/Mac) hosting the application Network Shutdown Module V3.xx (***)	OK

4.3.3 Other Devices

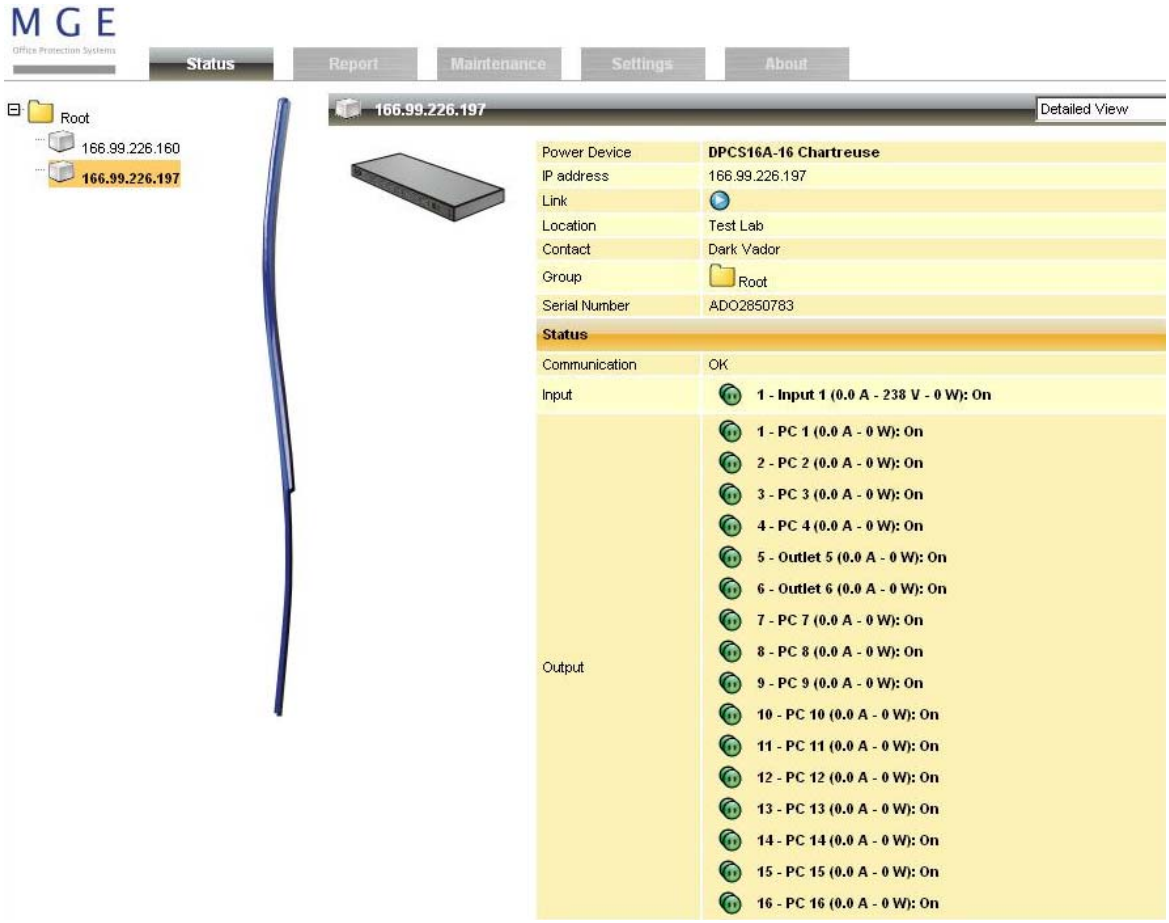
Equipment designation	Card/ proxy	Accessing device Web server
APC UPSs	APC Network Management Card	OK
Powerware UPSs	ConnectUPS-X Web /SNMP/xHubCard	OK
All IETF MIB enabled UPSs (RFC1628) e.g. Liebert, …		
PowerDsine series 6000 (*)	Card	OK
Rack Monitoring System Knurr (**)	Card (RMS Box)	OK
APC MGE STS-Web card – 66073 (for Upsilon Static Transfer Switch) (***)	Card	OK
APC MGE Static Switch Cabinet through Network Management Link (**device supported as beta**)	Card	OK

** Enterprise Power Manager 1.10 release & above*
*** Enterprise Power Manager 1.20 release & above*

4.3.4 Other devices supervision

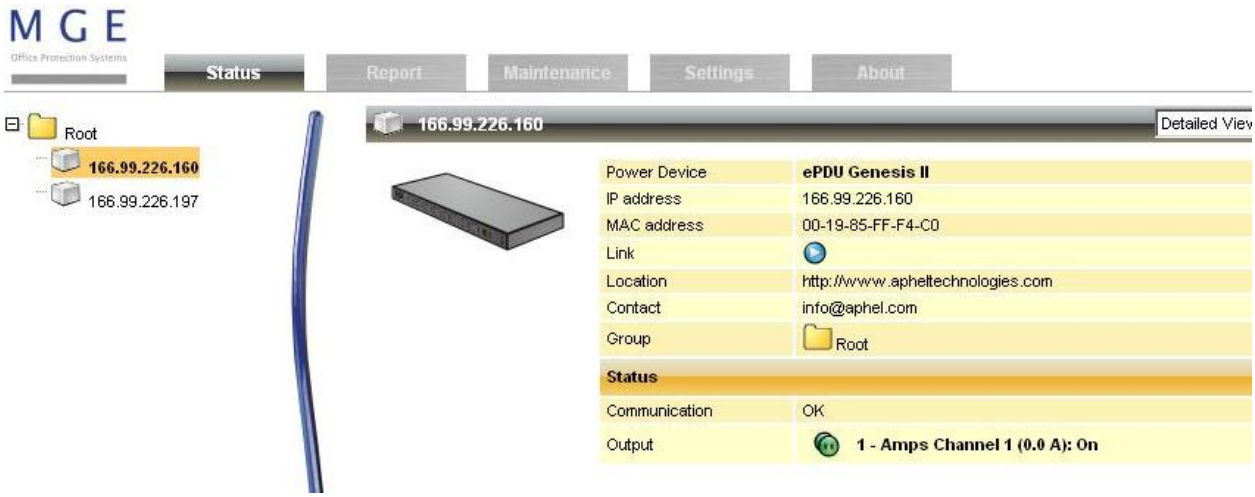
4.3.4.1 Eaton PDU Managed & Monitored

Detailed view:
Select one of the Eaton Managed PDU in the left menu and the following “detailed view” page appears:


MGE
Status
Report
Maintenance
Settings
About
Root
166.99.226.160
166.99.226.197
166.99.226.197
Detailed View
Power Device
DPCS16A-16 Chartreuse
IP address
166.99.226.197
Link
Location
Test Lab
Contact
Dark Vador
Group
Root
Serial Number
ADO2850783
Status
Communication
OK
Input
1 - Input 1 (0.0 A - 238 V - 0 W): On
Output
1 - PC 1 (0.0 A - 0 W): On
2 - PC 2 (0.0 A - 0 W): On
3 - PC 3 (0.0 A - 0 W): On
4 - PC 4 (0.0 A - 0 W): On
5 - Outlet 5 (0.0 A - 0 W): On
6 - Outlet 6 (0.0 A - 0 W): On
7 - PC 7 (0.0 A - 0 W): On
8 - PC 8 (0.0 A - 0 W): On
9 - PC 9 (0.0 A - 0 W): On
10 - PC 10 (0.0 A - 0 W): On
11 - PC 11 (0.0 A - 0 W): On
12 - PC 12 (0.0 A - 0 W): On
13 - PC 13 (0.0 A - 0 W): On
14 - PC 14 (0.0 A - 0 W): On
15 - PC 15 (0.0 A - 0 W): On
16 - PC 16 (0.0 A - 0 W): On

Eaton Managed PDU detailed view.

Detailed view:
Select one of the Eaton Monitored PDU in the left menu and the following “detailed view” page appears:
.



Eaton Monitored PDU detailed view.

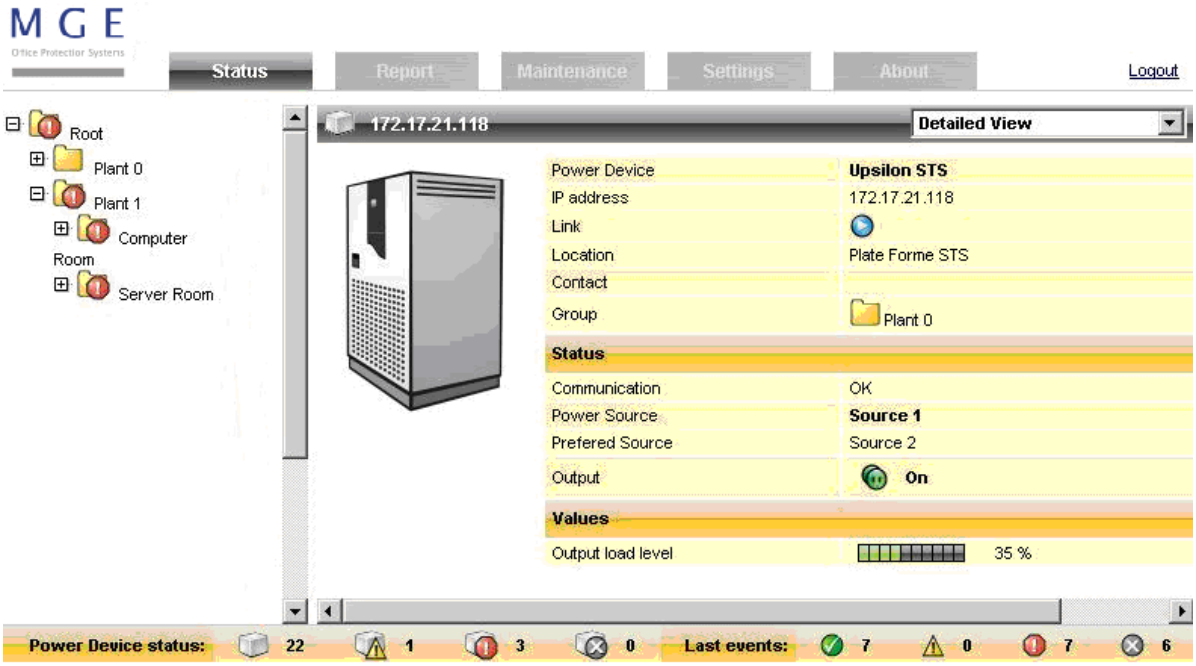
Events list:

Icon	Event status
	Normal. With this event, the device is coming back to a normal status: ◗ Communication with “PDU” is restored ◗ Maintenance operation is done ◗ The input X returns to normal load (managed) ◗ The input X voltage is in normal range (managed) ◗ The input X temperature is in normal range (managed) ◗ The outlet X is on (managed) ◗ The outlet X returns to normal load (managed) ◗ Temperature on sensor X is in normal range (managed) ◗ Humidity on sensor X is in normal range (managed)
	Warning. A problem occurred on the device: ◗ Maintenance operation is needed ◗ Temperature on sensor X is below low threshold (managed) ◗ Temperature on sensor X is above high threshold (managed) ◗ Humidity on sensor X is below low threshold (managed) ◗ Humidity on sensor X is above high threshold (managed)
	Critical. A serious problem occurred on the device: ◗ The input X overload (managed) ◗ The input X voltage is above high threshold (managed) ◗ The input X voltage is below low threshold (managed) ◗ The input X temperature is above high threshold (managed) ◗ The input X temperature is below low threshold (managed) ◗ The outlet X is off (managed) ◗ The outlet X overload (managed)
	Communication lost between the **PDU** and the **Enterprise Power Manager**: ◗ Communication with “PDU” has failed

4.3.4.2 Static Transfer Switch

Detailed view:

◗ Select one of the STSs in the left menu and the following “detailed view” page appears:



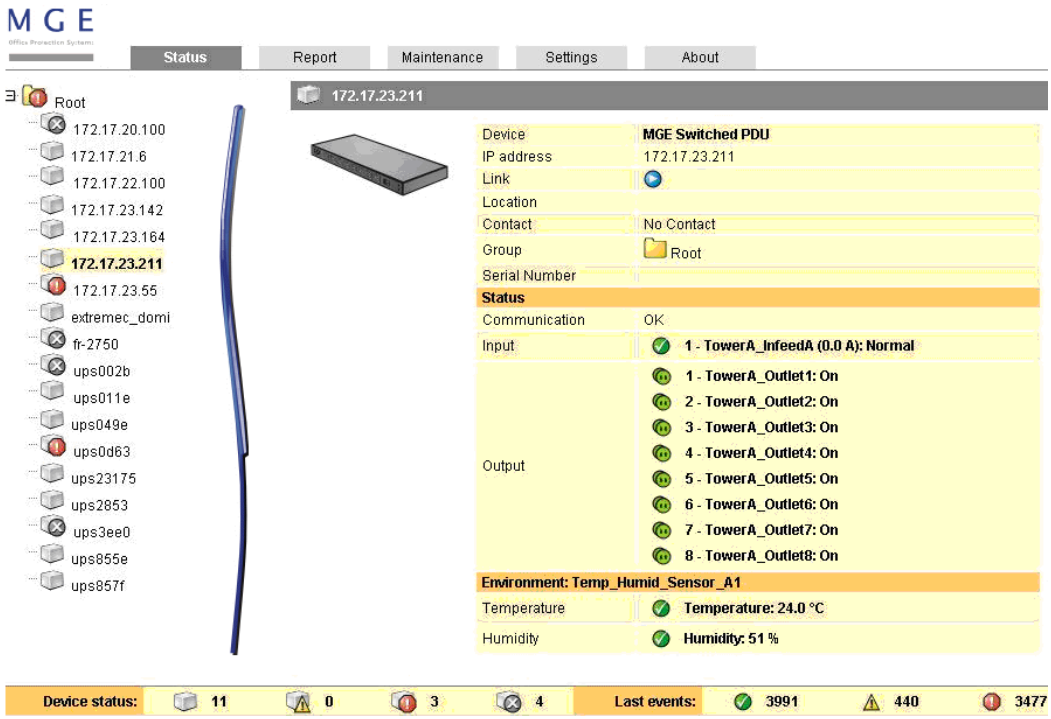
STS Detailed View.

Icon	Event status
	Normal. With this event, the device is coming back to a normal status: ◗ Communication with device is restored ◗ Maintenance operation is done ◗ Source transfer allowed ◗ The STS output is on
	Warning. A problem occurred on the device: ◗ Maintenance operation is needed
	Critical. A serious problem occurred on the device: ◗ Source transfer forbidden ◗ The STS output is off
	Communication lost between the **STS** and the **Enterprise Power Manager**: ◗ Communication with device has failed

4.3.4.3 MGE Switched PDU & Ampmeter PDU

Detailed view:

- Select one of the PDUs in the left menu and the following “detailed view” page appears:



Switched PDU Detailed View.

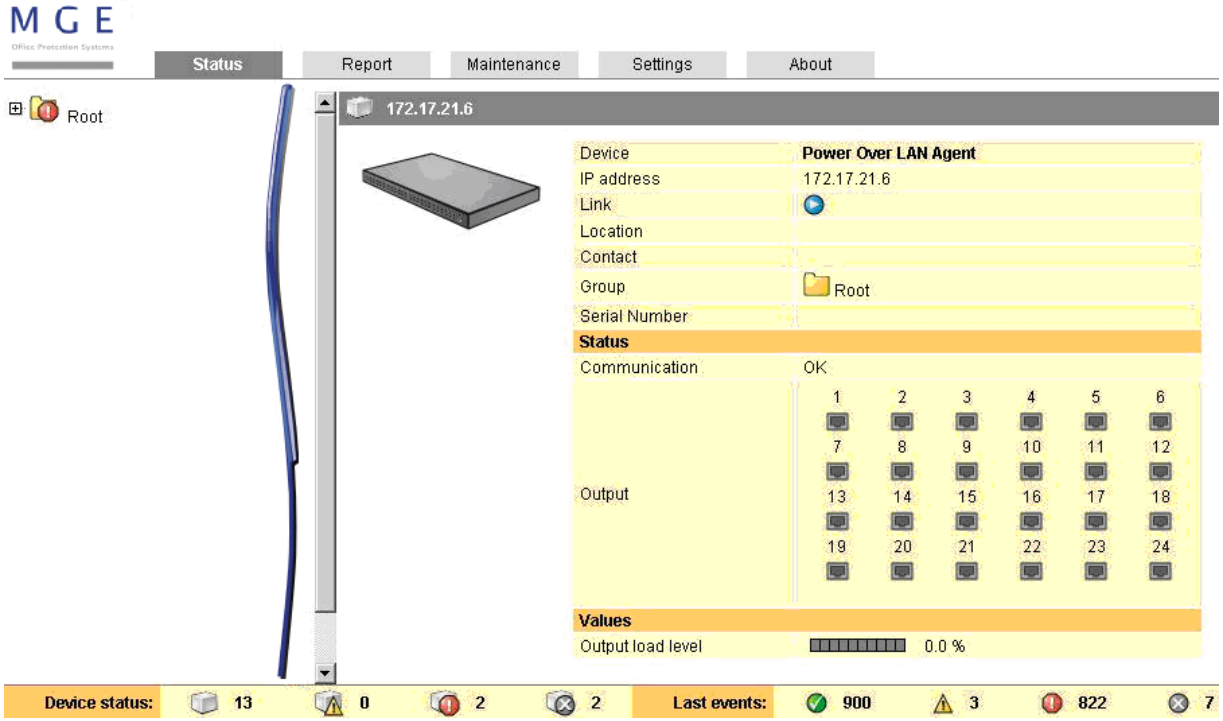
Events list:

Icon	Event status
	Normal. With this event, the device is coming back to a normal status: ◗ Communication with “PDU” is restored ◗ Maintenance operation is done ◗ The input X returns to normal load ◗ The outlet X is on ◗ Temperature on sensor X is in normal range ◗ Humidity on sensor X is in normal range
	Warning. A problem occurred on the device: ◗ Maintenance operation is needed ◗ The input X load is above high threshold ◗ Temperature on sensor X is below low threshold ◗ Temperature on sensor X is above high threshold ◗ Humidity on sensor X is below low threshold ◗ Humidity on sensor X is above high threshold
	Critical. A serious problem occurred on the device: ◗ The input X overload ◗ The outlet X is off
	Communication lost between the **PDU** and the **Enterprise Power Manager**: ◗ Communication with “PDU” has failed

4.3.4.4 MGE Midspan & PowerDsine

Detailed view:

- Select one of the Midspans in the left menu and the following “detailed view” page appears:
- A color code and a context-sensitive help define the output status.



Midspan Detailed View.

Events list:

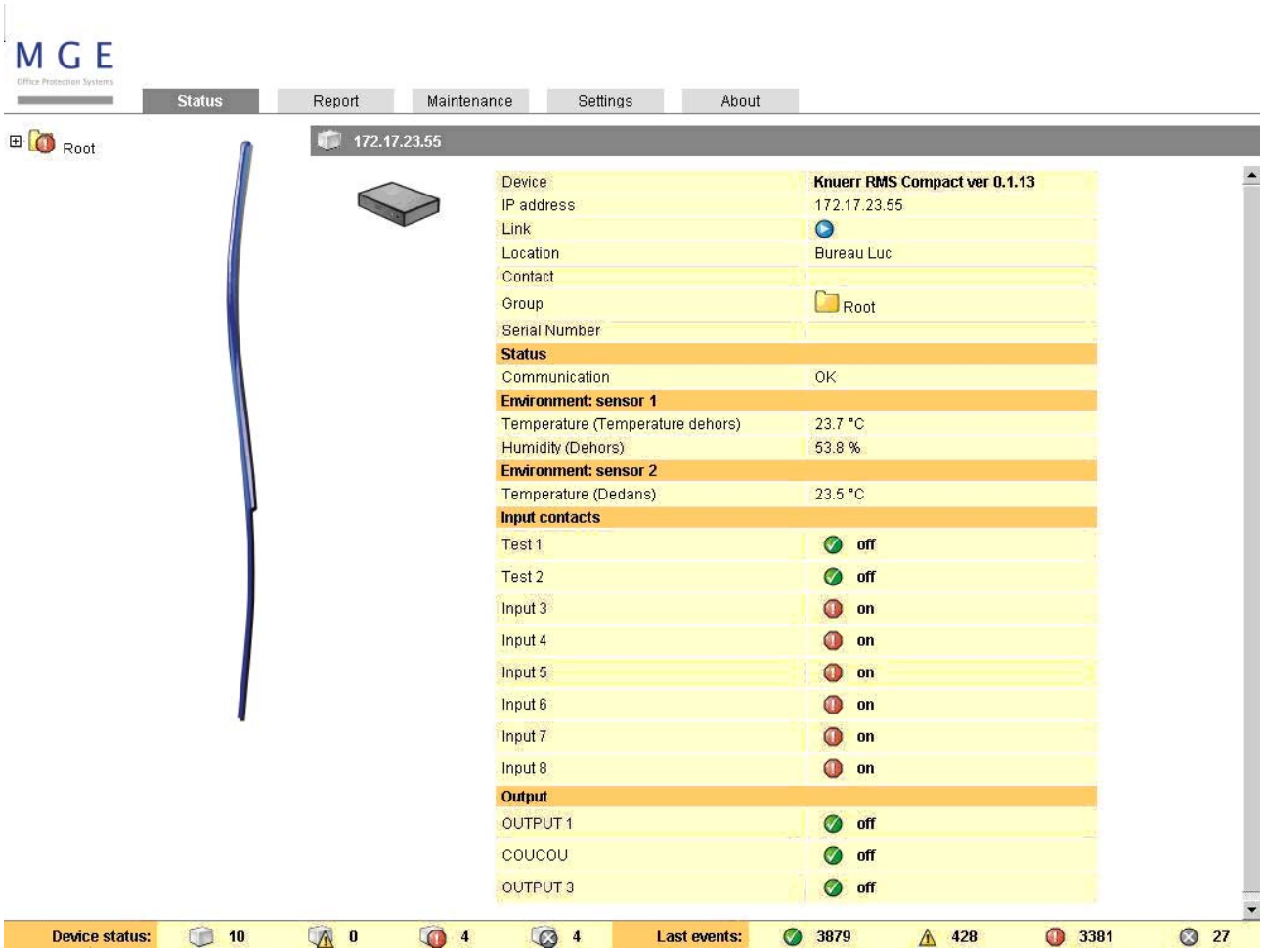
Icon	Event status
	Normal. With this event, the device is coming back to a normal status: ◗ Communication with “Card” is restored ◗ Maintenance operation is done
	Warning. A problem occurred on the device: ◗ Maintenance operation is needed
	Communication lost between the **Mispan** and the **Enterprise Power Manager**: ◗ Communication with “Card” has failed

4.3.4.5 Rack Monitoring Systems (Knuerr & Sinetica)

Important note:
To be able to supervise the Knuerr RMS box, from the Enterprise Power Manager supervisor, you first have to configure each RMS box.

Proceed as follows:
- Enter the "NMS Setup" menu of the RMS box,
- Authorize the read access for the IP address of the machine hosting Enterprise Power Manager.

Detailed view:
- Select one of the RMS device in the left menu and the following “detailed view” page appears:



RMS Detailed View.

Events list:

Icon	Event status
	Normal. With this event, the device is coming back to a normal status: ◗ Communication with “RMS” is restored ◗ Maintenance operation is done ◗ Temperature sensor X is in normal range ◗ Humidity sensor X is in normal range ◗ Input X off ◗ Output X off
	Warning. A problem occurred on the device: ◗ Maintenance operation is needed ◗ Temperature sensor X is above upper warning limit"; ◗ Temperature sensor X is below lower warning limit ◗ Humidity sensor X is above upper warning limit ◗ Humidity sensor X is below lower warning limit
	Critical. A serious problem occurred on the device: ◗ Input X on ◗ Output X on ◗ Temperature sensor X is above upper control limit ◗ Temperature sensor X is below lower control limit ◗ Humidity sensor X is above upper control limit ◗ Humidity sensor X is below lower control limit
	Communication lost between the **RMS** and the **Enterprise Power Manager**: ◗ Communication with “RMS” has failed

4.4 Performances for Enterprise Power Manager

4.4.1 Gold Edition

The **Enterprise Power Manager (Gold Edition)** doesn't have any limitation concerning the number of devices to be supervised. It has been tested on a dedicated server with 1000 devices.

Network Performances (out of discovery process):

- On a 100 Mbits/sec Ethernet network , the measured load is 10 %. (for 1000 devices), it means around 1Kb/s per device.
- On a 100 Mbits/sec Ethernet network , the measured load is 1 %. (for 1000 devices)

CPU resources:
On the servers running for test, the application processes are using 5% of CPU resource

Recommended configuration for 1000 devices:

- Minimal configuration: 512 Mb RAM + CPU 2.6 GHz
- Recommended configuration: **1 Gb RAM + CPU 2.6 GHz**

Notes:

- These measures have been carried out on Windows XP Service Pack 1 (We do not recommend XP Service Pack 2 that only authorizes 10 simultaneous network connections).
- We also do not recommend using Internet Explorer continuously with the main EPM page opened, because the browser uses a lot of system resources.
- These measures are applicable for Network Management Card (>FA) or Network Management Proxy.

4.4.2 Discovery time:

We measured an EPM typical discovery time for several network ranges.
Note that the new Quick Scan feature improves drastically the discovery time with the compatible devices.
RAM or CPU parameters of the computer hosting EPM influence very little this discovery time.
The key parameter is the number of simultaneous network connections (limited to 10 on XP Service Pack 2).
To verify this, we experienced the "xp-Antispy" utility that can configure the number of simultaneous network connections. The Patch "No-Limit" for TCP-IP of Service Pack 2 (sp2TcPIPatch) can also perform the same configuration.
With 2000 simultaneous connections the "XP Service Pac 2" discovery time can be compared with the one on Win 2000/ Win XP SP1/ Win 2003

Discovery Time measured on a machine with minimal configuration 512 Mb :

	From 172.17.1.1 To 172.17.1.10 10 IPs	From 172.17.1.1 To 172.17.4.255 1020 IPs	From 172.17.1.1 To 172.17.40.255 10 200 IPs	From 172.17.1.1 To 172.17.255.255 65 025 IPs
Win 2000/ Win XP SP1/ Win 2003	1 min	2 min	17 min	1h 50 min
XP Service Pac 2 (limited to 10 connections)	1 min	1h 10 min	Not Recommended (use Quick Scan feature)	Not Recommended (use Quick Scan feature)

4.5 Maintenance

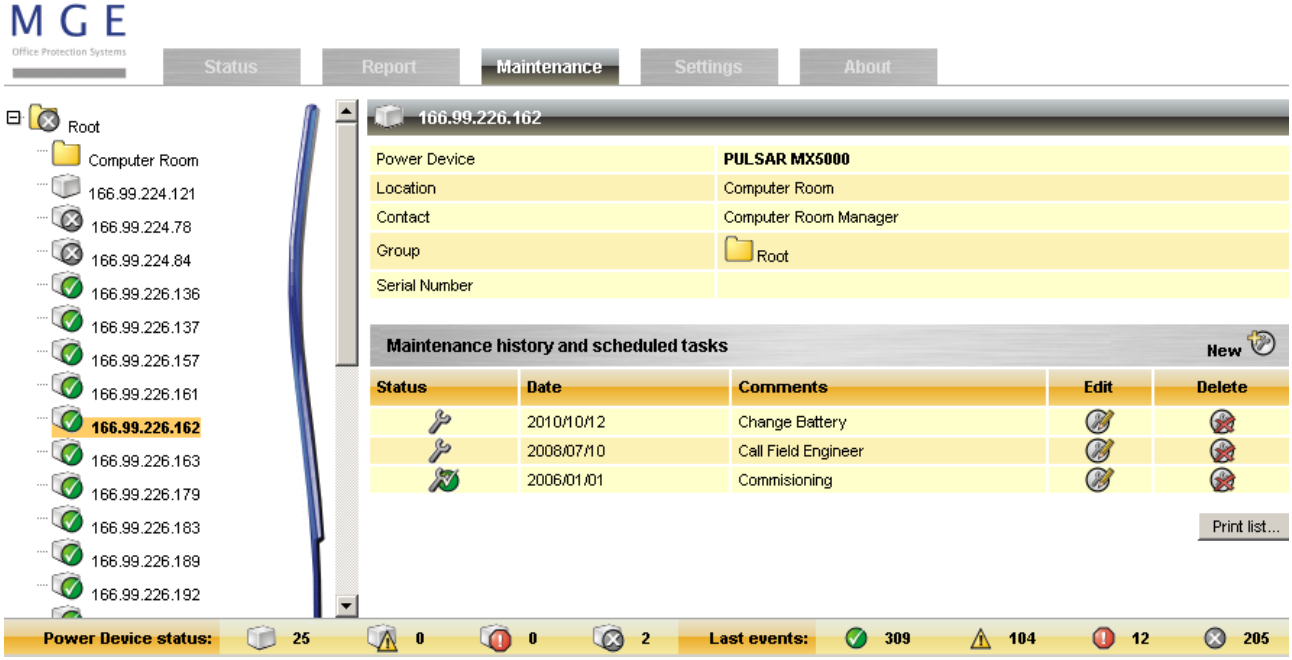
A dedicated view has been created to display UPS maintenance information.

The icons highlight the status of the maintenance tasks.

Icon	Maintenance status
	Normal. A maintenance task has been scheduled and has been carried out.
	Warning. A maintenance task has been scheduled and the task date has exceeded.
	Normal. A maintenance task has been scheduled and the date has not been exceeded.

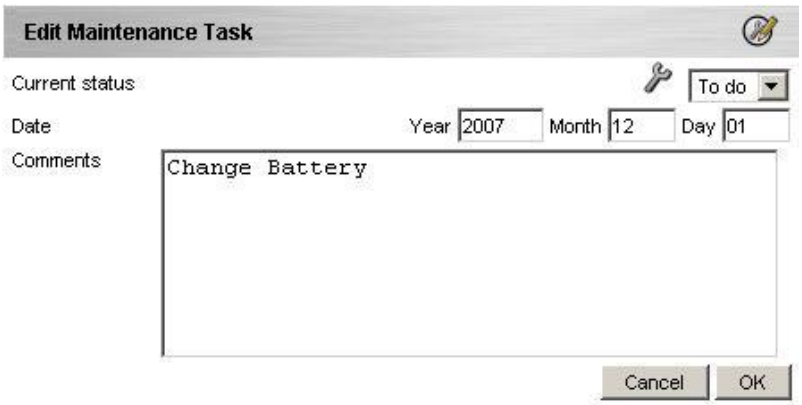
Two types of display are possible for the maintenance tasks. On the Maintenance Tab, if in the left menu you select:

- a group, a list view will be displayed,
- a device, a view with detailed maintenance information for that device will be displayed.



Detailed maintenance view for the selected device of your network area.

From this view, you can define the maintenance tasks by clicking on the **Edit** button
You can also schedule a new maintenance task by clicking on the **New task** button. When the task date has expired, a warning alert is sent. You may then have to call MGE Office Protection Systems service support to perform the task.



Editing a maintenance task

Note: When the maintenance task has been performed, you have to change its **Current Status** from **To do** to **Done.**

5 FAQ and Error messages

In the HTML pages.

In the page “Configuration -> Autodiscovery”, when I click on the “Discover” button the expected page is not displayed
Solution: Check if an anti popup filter is activated on your web browser and configure this filter to accept the page. Check you don’t have the highest security level on IE

Cannot display the UPS properties page. HTTP 404 error with IE.
Solution: Check the URL entered. > https://<name or IP of the computer hosting EPM>/PowerManager/ or > http://< name or IP of the computer hosting EPM >/PowerManager/ Note: The Web server is case sensitive

When you attempt to view the properties or configuration pages, the browser requests a user name and password.
Solution: The system administrator has protected access to the pages. You must request a user name and password from your administrator.

With IE7, some parts of HTML pages are not displayed: Automatic Updates, Device status, …
Solution: MGE has found a turnaround to this IE7 problem in EPM 2.06.

6 Glossary

IP address
When TCP/IP is installed on a computer, an address is assigned to the system. Each address is unique and is made up of four numbers, each between 0 and 256 (e.g. 168.8.156.210).

Network Management Proxy
Network Management Proxy is used to control a UPS and connect it to the TCP/IP network.

NMS (Network Management System)
The NMS supervises SNMP devices connected to the TCP-IP Network.

Network Shutdown Module
The Network Shutdown Module is a software module that uses the information transmitted by the Network Management Card/Proxy to inform computer users on the current status of the electrical power supplied to the computer.
If the supply of the electrical power from the MGE UPS is at risk, the Network Shutdown Module initiates an orderly shutdown of the computer under the most secure conditions possible.

SSL (Secure Socket Layer, created by Netscape)
A solution for securing transactions over the internet. SSL is a communication protocol that authenticates the data exchanged, as well as ensuring its confidentiality and integrity. The protocol uses a recognized encryption method, the **RSA algorithm with a public key** (where RSA means Rivest, Shamir and Adleman, the inventors). An RSA key is the result of operations involving prime numbers. SSL is built into the Internet browsers on the market. The padlock in the bottom of your browser screen is automatically displayed if the server sending information uses SSL.

TCP/IP (Transmission Control Protocol / Internet Protocol)
Family of protocols for the transport and network layers.

7 Acknowledgements

SQLite
Huge thanks from the MGE software development team to the SQLite Project http://www.sqlite.org/.
Their generous donation of the source code to the public domain helped us for this project.

Pi3Web
Huge thanks from the MGE software development team to the Pi3Web Project. http://pi3web.sourceforge.net/

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